



# Utah Water Assessment & Conditions Monitoring (Drought Webinar)

The meeting will begin shortly



Thank you to our contributors



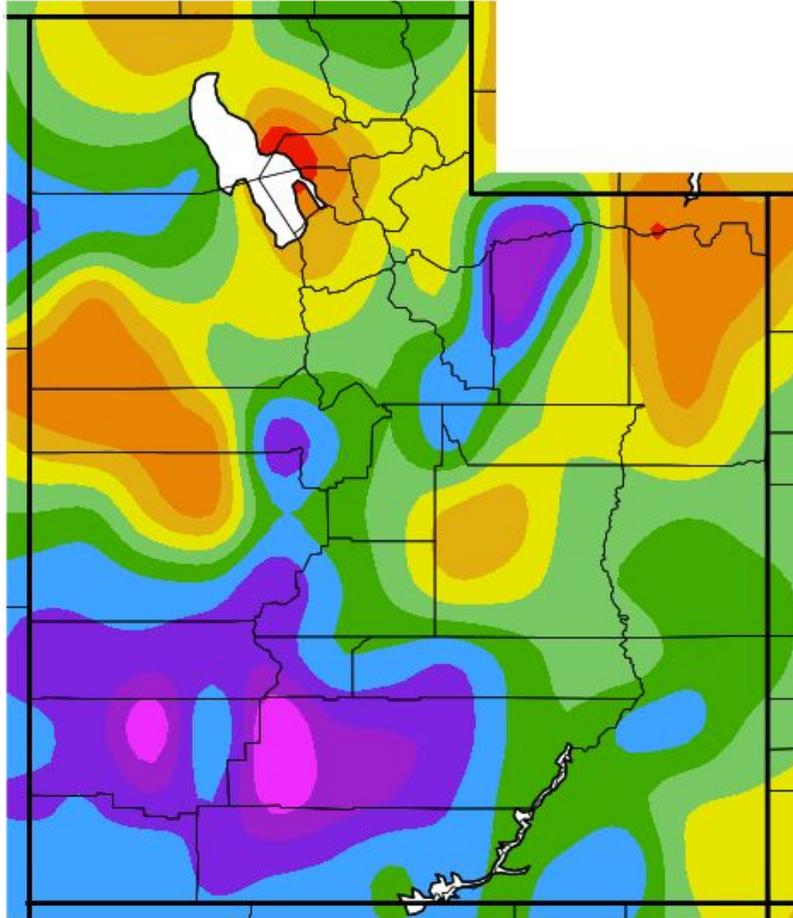


# **Utah Water Assessment & Conditions Monitoring Webinar**

**August 23, 2022**

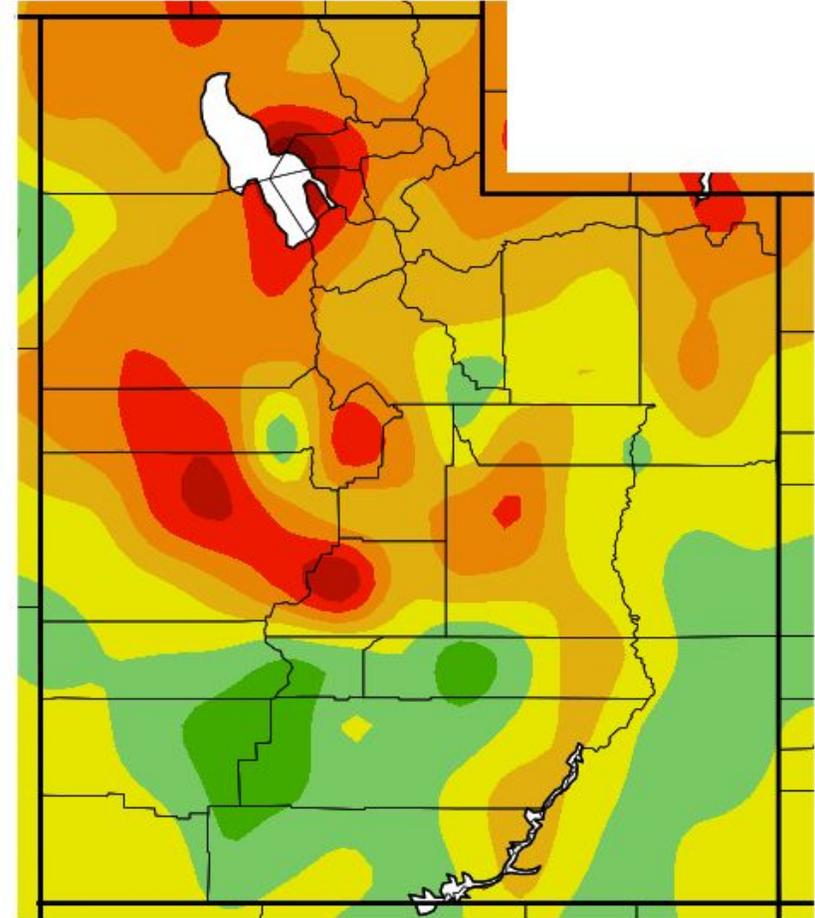
# Daily Max. Temperature Anomaly (14-day & 60-day)

Av. Max. Temperature dep from Ave (deg F)  
8/9/2022 – 8/22/2022



Generated 8/23/2022 at WRCC using provisional data.  
NOAA Regional Climate Centers

Av. Max. Temperature dep from Ave (deg F)  
6/24/2022 – 8/22/2022



Generated 8/23/2022 at WRCC using provisional data.  
NOAA Regional Climate Centers

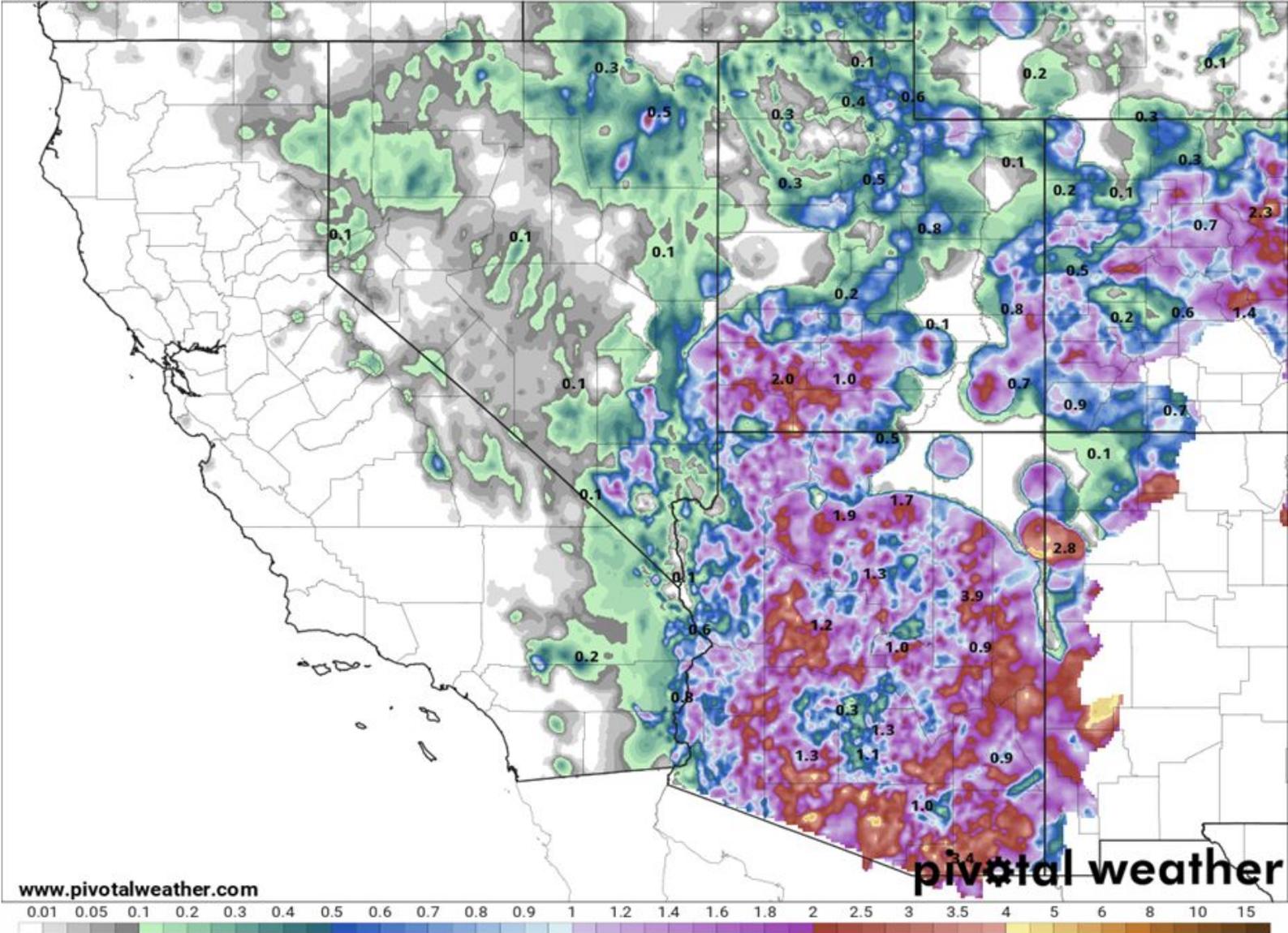
Agency - Utah Climate Center

Presenter - Jon Meyer

# Precipitation 7 day history

168-Hour Stage IV Precipitation Analysis (in)  
Ending Monday, Aug. 22, 2022 at 5 a.m. PDT

Init: Mon 2022-08-22 12z NCEP Stage IV



Agency - Utah Climate Center  
Presenter - Jon Meyer

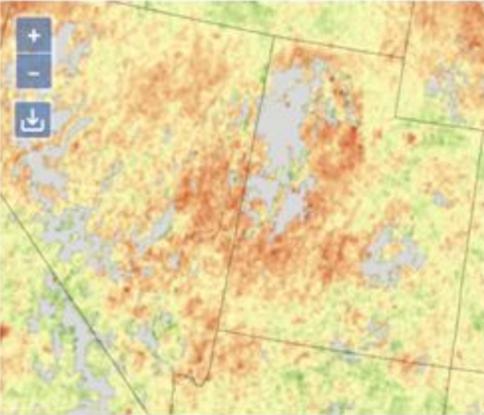


# Evaporative Stress Index (ESI) and Evaporative Drought Demand Index (EDDI)

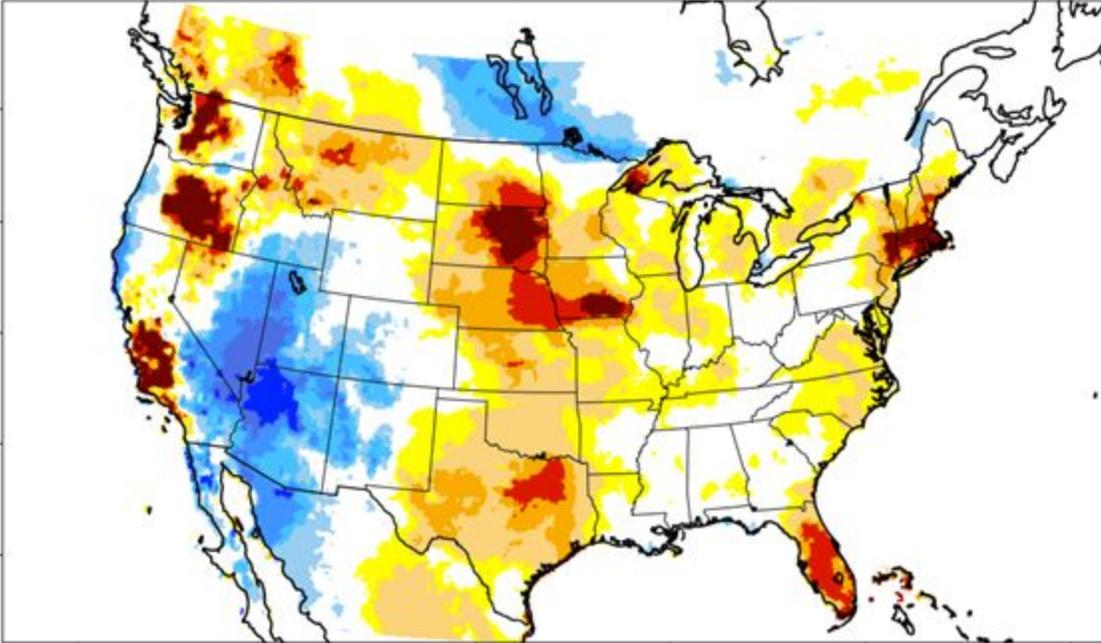
[Evaporative Stress Index](#) [VegDRI](#) [Vegetation Health Index](#)

The Evaporative Stress Index (ESI) describes temporal anomalies in evapotranspiration (ET), highlighting areas with anomalously high or low rates of water use across the land surface. The ESI also demonstrates capability for capturing early signals of "flash drought," brought on by extended periods of hot, dry, and windy conditions leading to rapid soil moisture depletion. [Learn more.](#)

Standardized ET/PET Anomalies



1-month EDDI categories for August 18, 2022



120°W 110°W 100°W 90°W 80°W 70°W

Drought categories Wetness categories

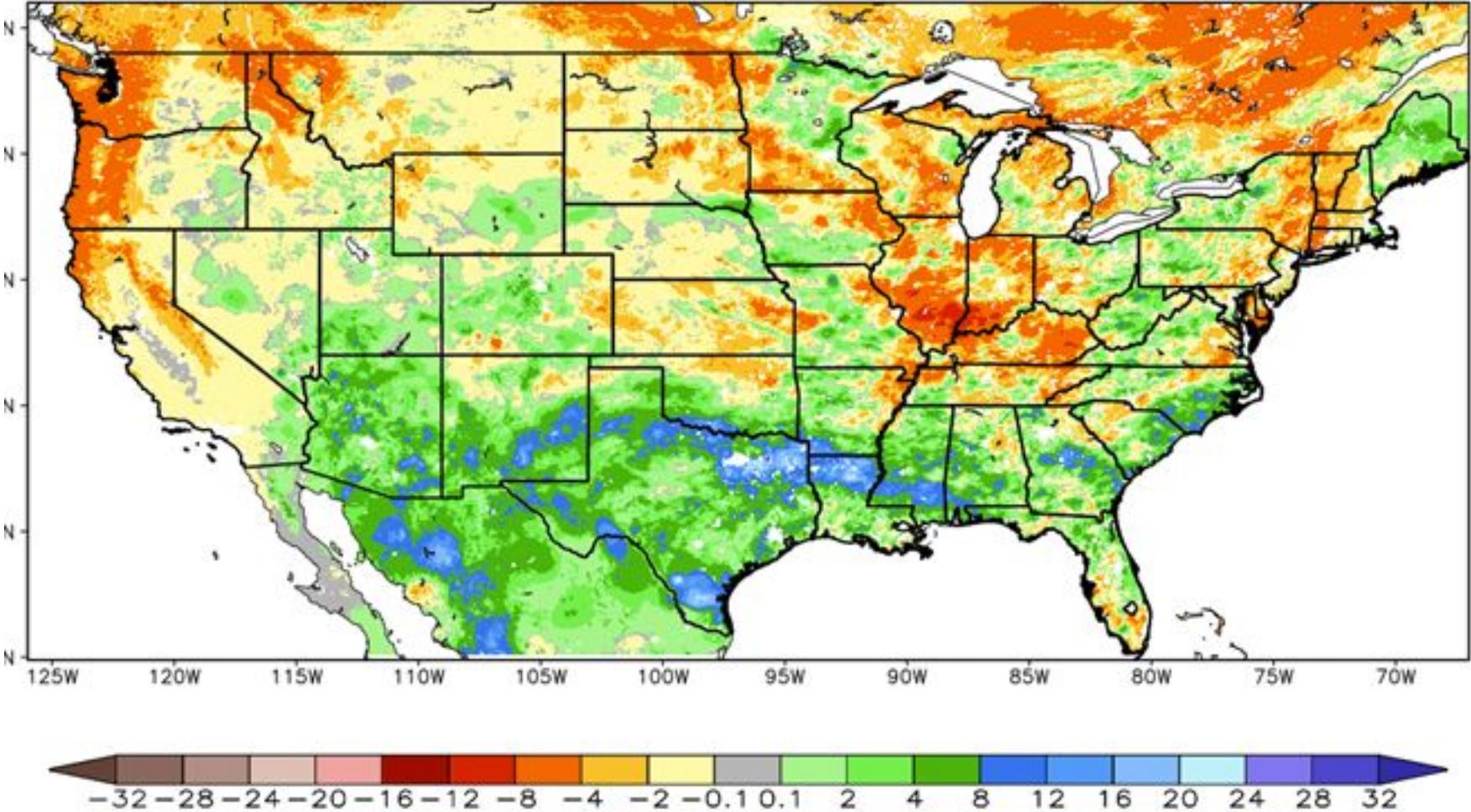


100% 98% 95% 90% 80% 70% 30% 20% 10% 5% 2% 0%

(EDDI-percentile category breaks: 100% = driest; 0% = wettest)

# Soil Moisture Change (2-week)

2-Week Difference in Column Relative Soil Moisture (%) valid 00z 23 Aug 2022



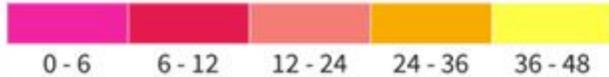
# Vegetation Health Index (VHI) & VegDRI

### Vegetation Condition

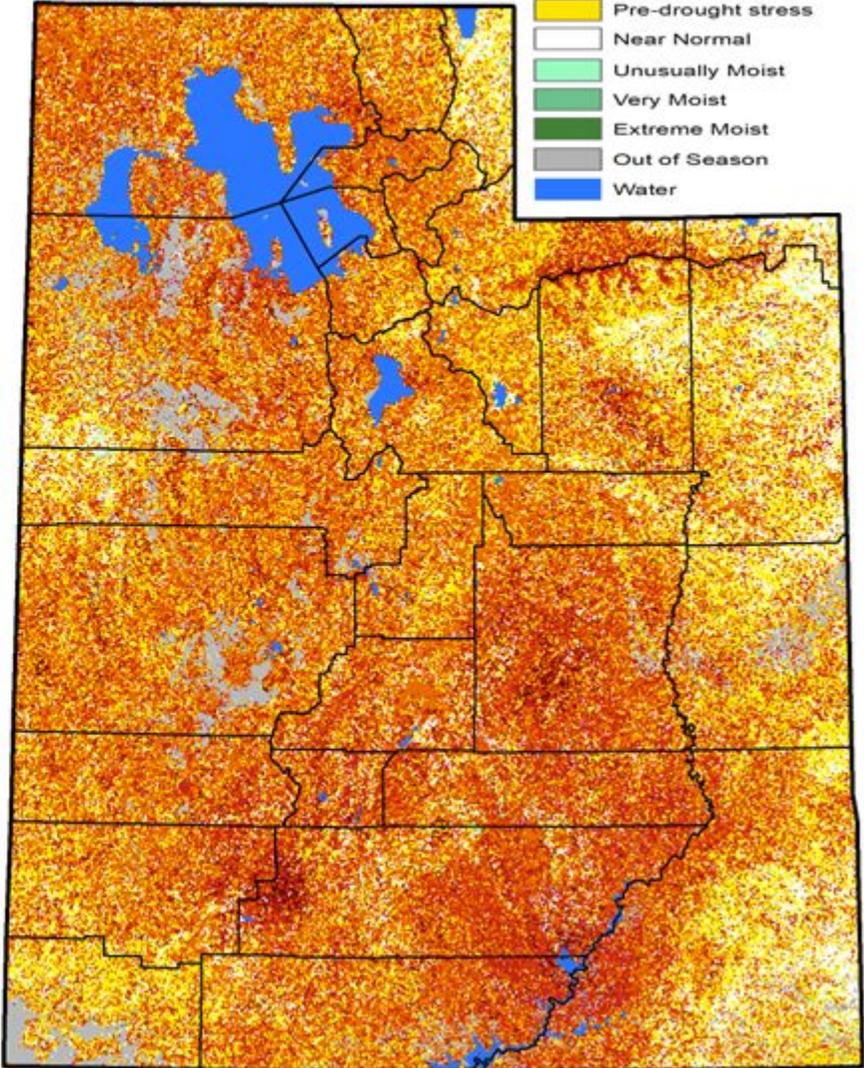
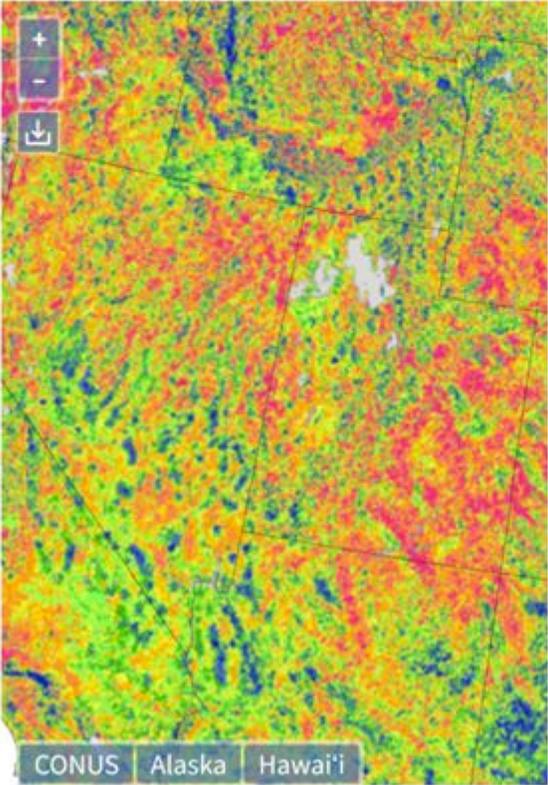
- Extreme Drought
- Severe Drought
- Moderate Drought
- Pre-drought stress
- Near Normal
- Unusually Moist
- Very Moist
- Extreme Moist
- Out of Season
- Water

NOAA's Center for Satellite Applications and Research produces satellite-based global vegetation health products, including the vegetation health index (VHI). VHI is a proxy characterizing vegetation health or a combined estimation of moisture and thermal conditions. Vegetation health is often used to estimate crop condition and anticipated yield. If the indices are below 40, indicating different levels of vegetation stress, losses of crop and pasture production might be expected; if the indices above 60 (favorable conditions), plentiful production might be expected. [Learn more.](#)

#### Unfavorable Conditions

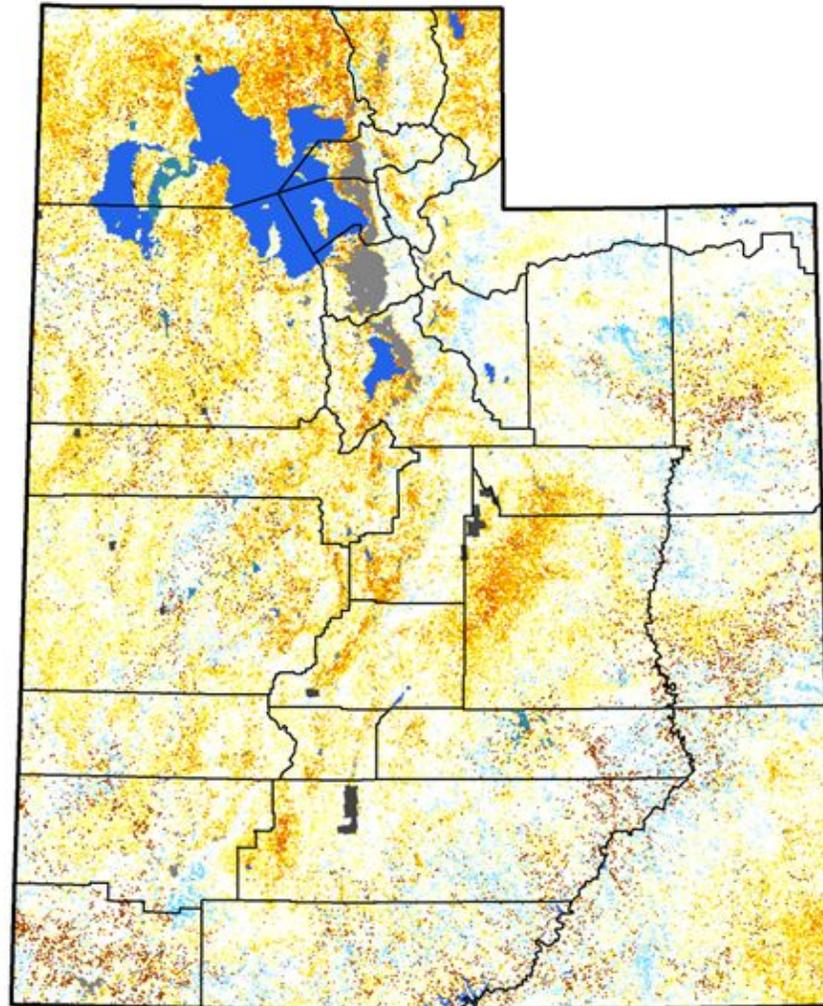


#### Favorable Conditions

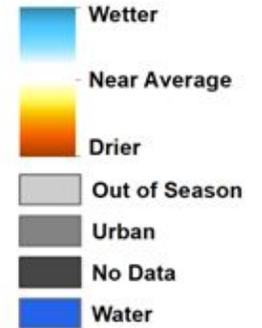


# Quick Drought Response Index Utah

July 31, 2022  
(Week 31)



Conditions Relative to  
4-Week Historical Average



**CALMIT**  
University of Nebraska - Lincoln  
Center for Advanced Land Management Information Technology



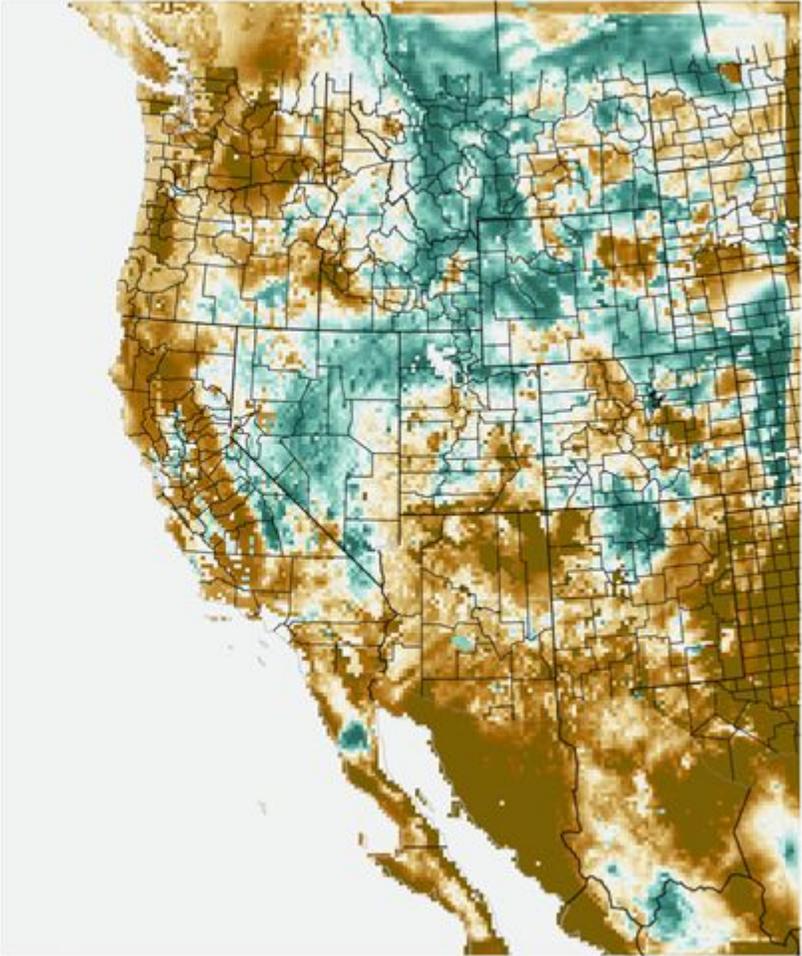
Agency - Utah Climate Center  
Presenter - Jon Meyer

# UCC Soil Moisture Forecast

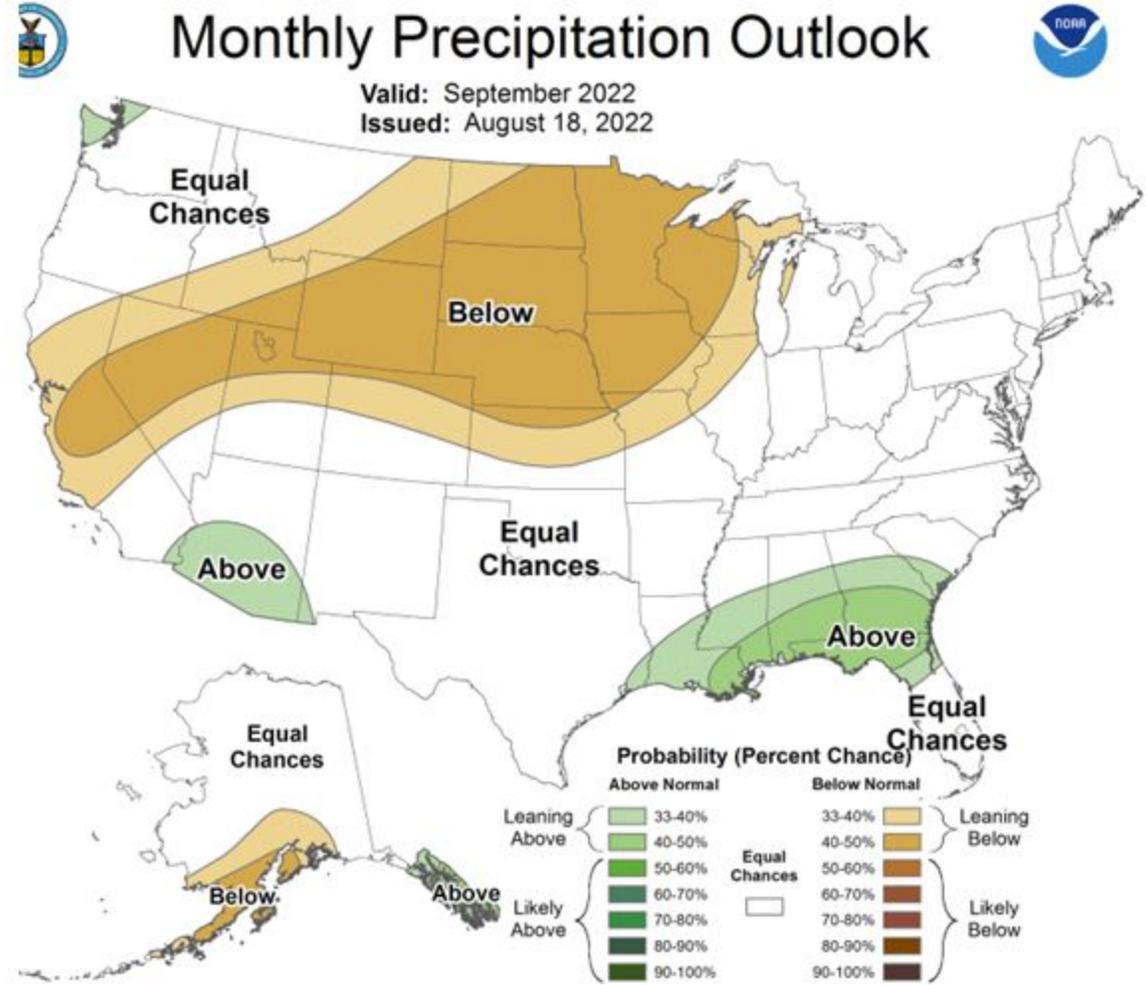
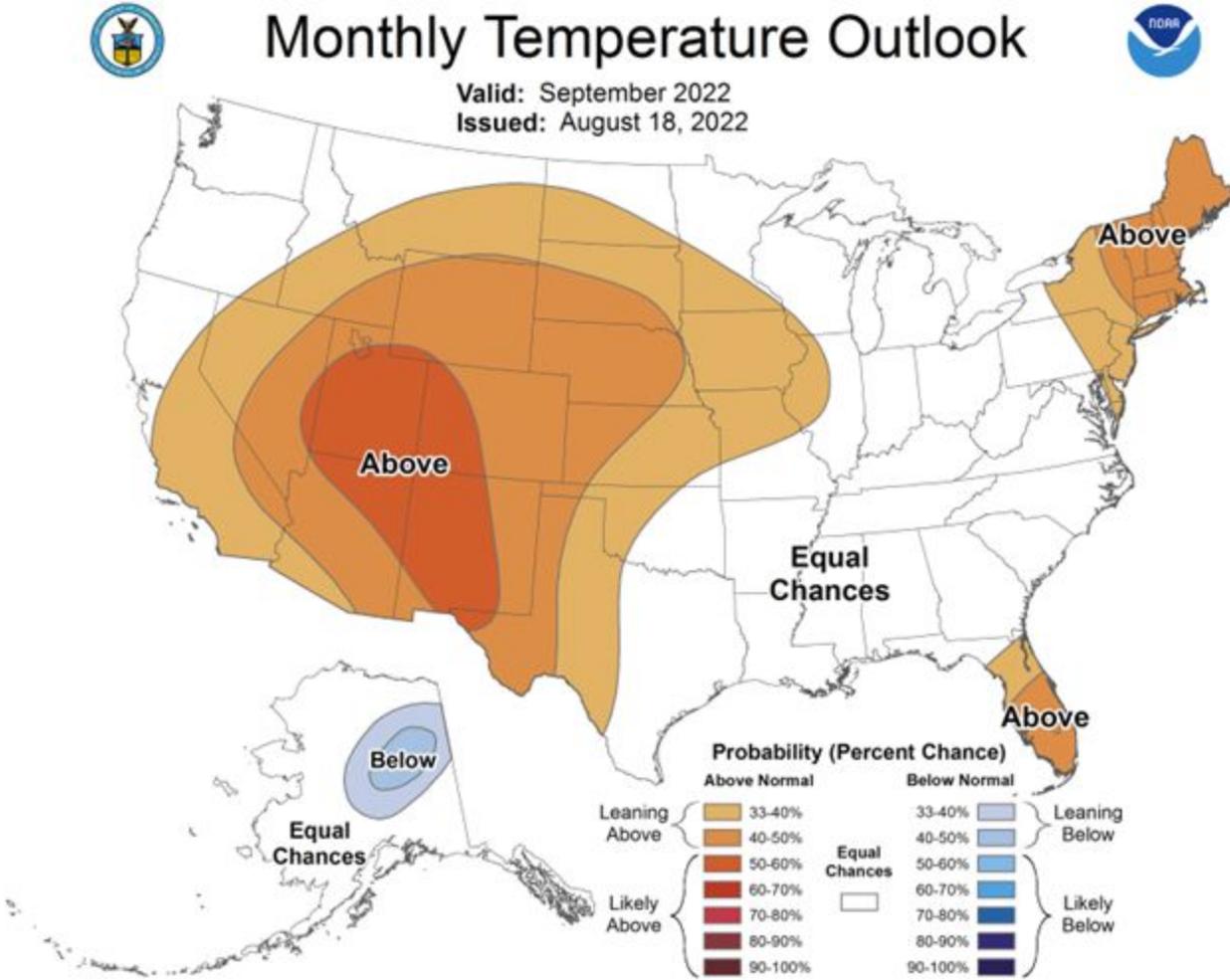
Change in Soil Moisture Since Initialization (%)  
F372 Valid Tue 2022-09-06 00z  
Init: Sun 2022-08-21 12z



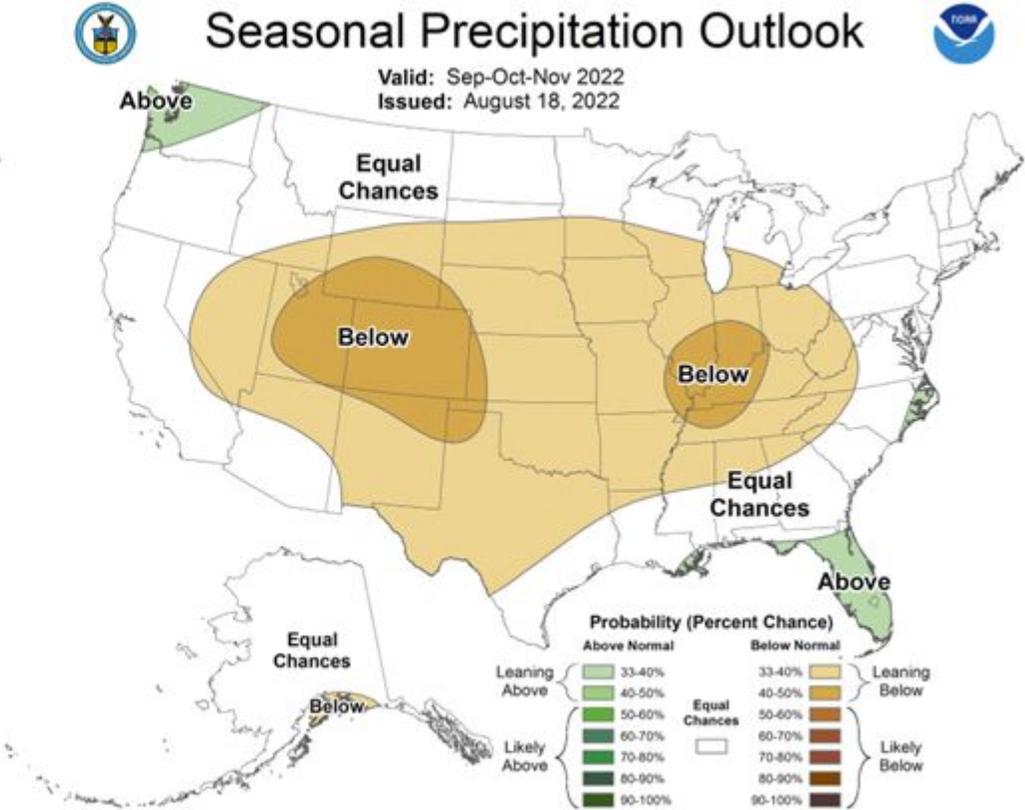
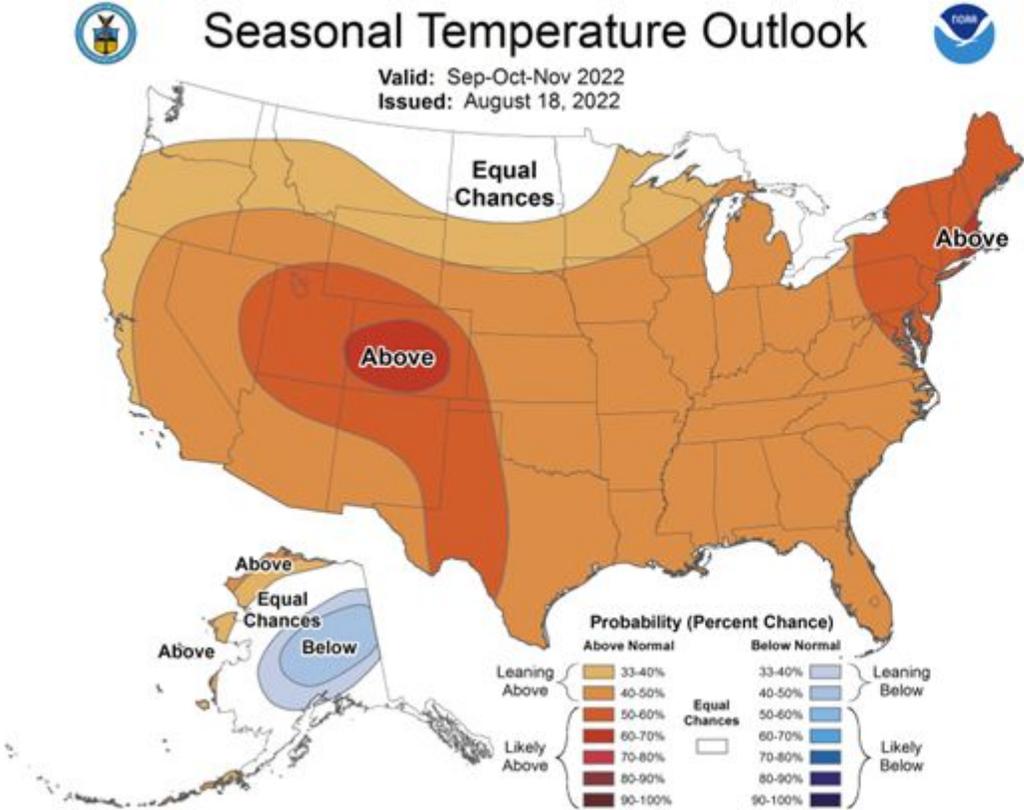
Change in Soil Moisture Since Initialization (%)  
F636 Valid Sat 2022-09-17 00z  
Init: Sun 2022-08-21 12z

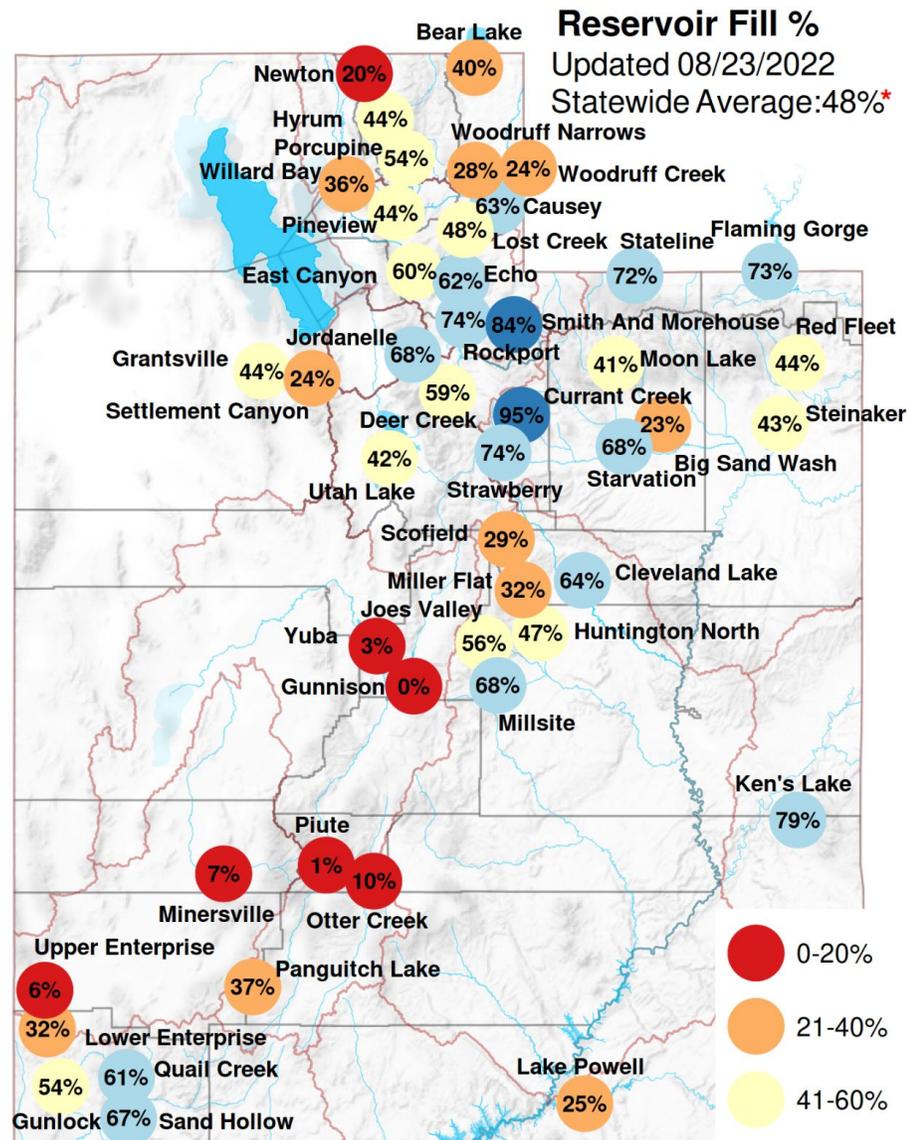


# CPC September Outlook



# CPC September-November Outlook





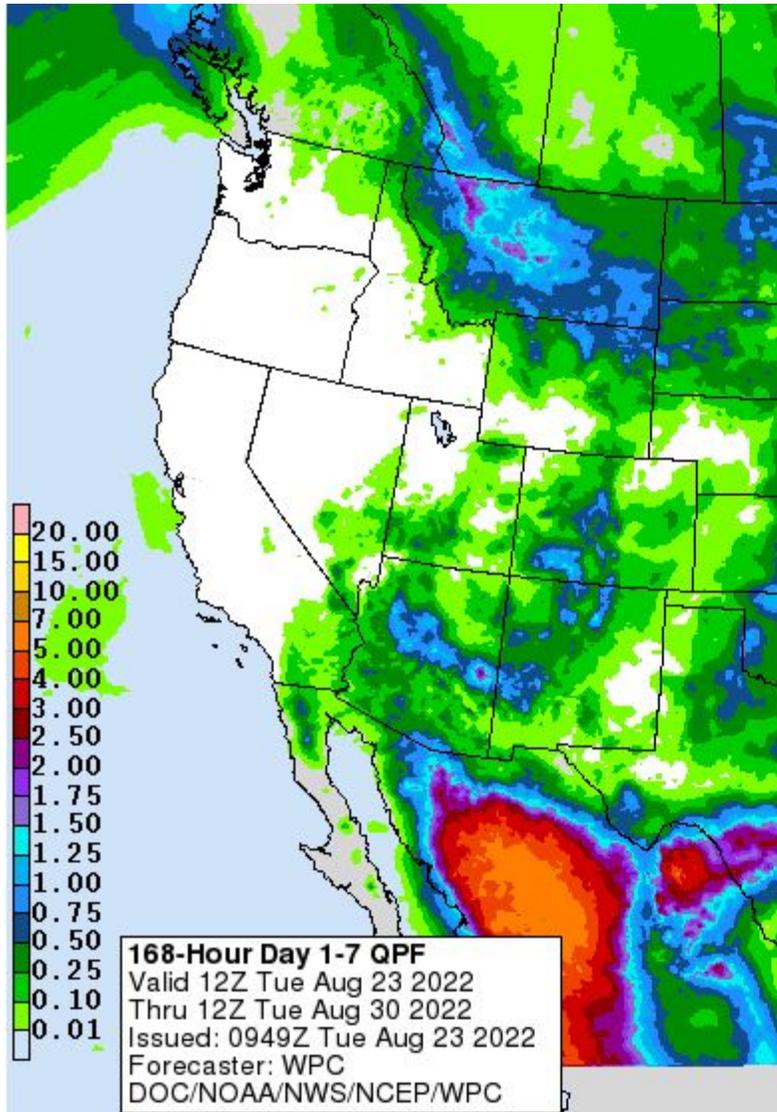
Data Sources: [water.utah.gov/reservoirlevels](http://water.utah.gov/reservoirlevels)

\*State average excludes Lake Powell & Flaming Gorge to better represent the state's water supply.

Total capacity including these is 39%



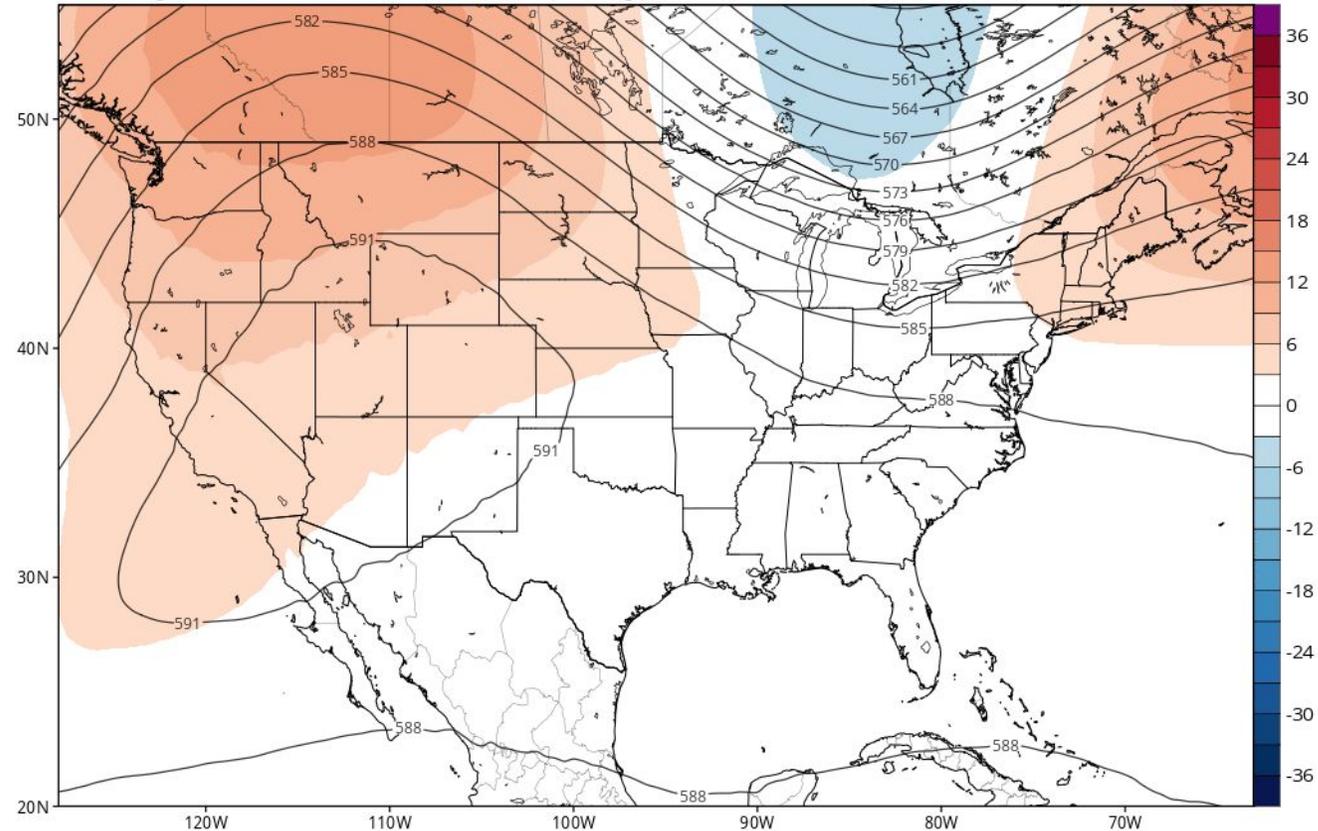
# Weather Forecast Office Utah Day 1-7 Outlook



GEFS 500mb Geopotential Height & Anomaly (dam) (based on CFSR 1981-2010 Climatology)

Init: 06z Aug 23 2022 Forecast Hour: [186] valid at 00z Wed, Aug 31 2022

TROPICALTIDBITS.COM



- Monsoonal moisture returns to the state Wednesday. Diurnal showers/storms possible through Saturday, namely southern Utah and the higher terrain.
- Growing confidence in a drying trend heading into early next week.
- Temperatures slightly above normal

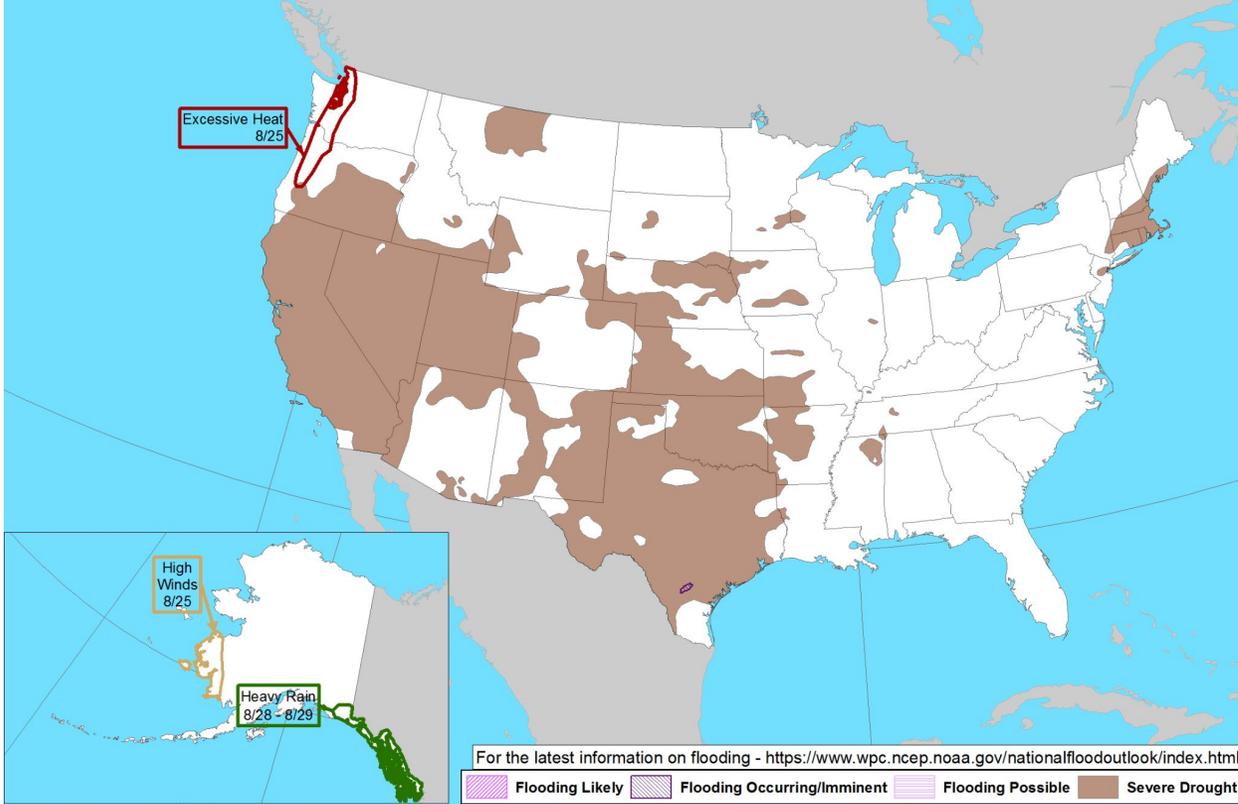
Agency - National Weather Service Weather Forecast Office

Presenter - Glen Merrill

# Weather Prediction Center U.S. Day 3-7 Hazards Outlook and ERO



## Day 3-7 U.S. Hazards Outlook Valid: 08/25/2022-08/29/2022

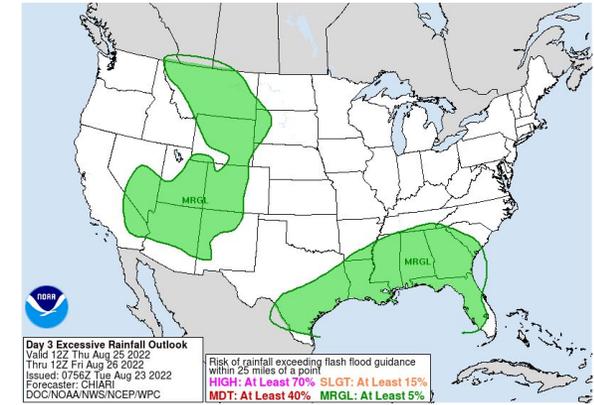
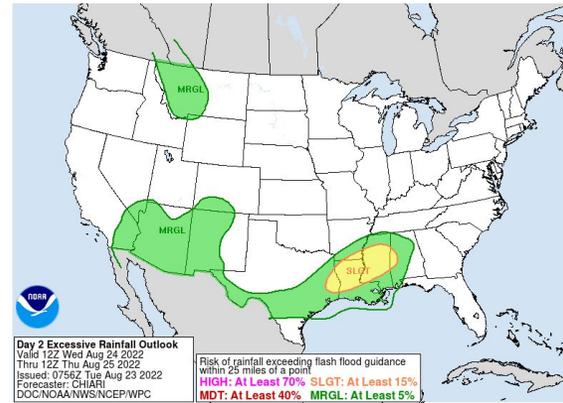


Weather Prediction Center

Made: 08/22/2022 3PM EDT

Follow us:

[www.wpc.ncep.noaa.gov](http://www.wpc.ncep.noaa.gov)



# Climate Prediction Center 8 to 14 Day Outlooks - Temperature

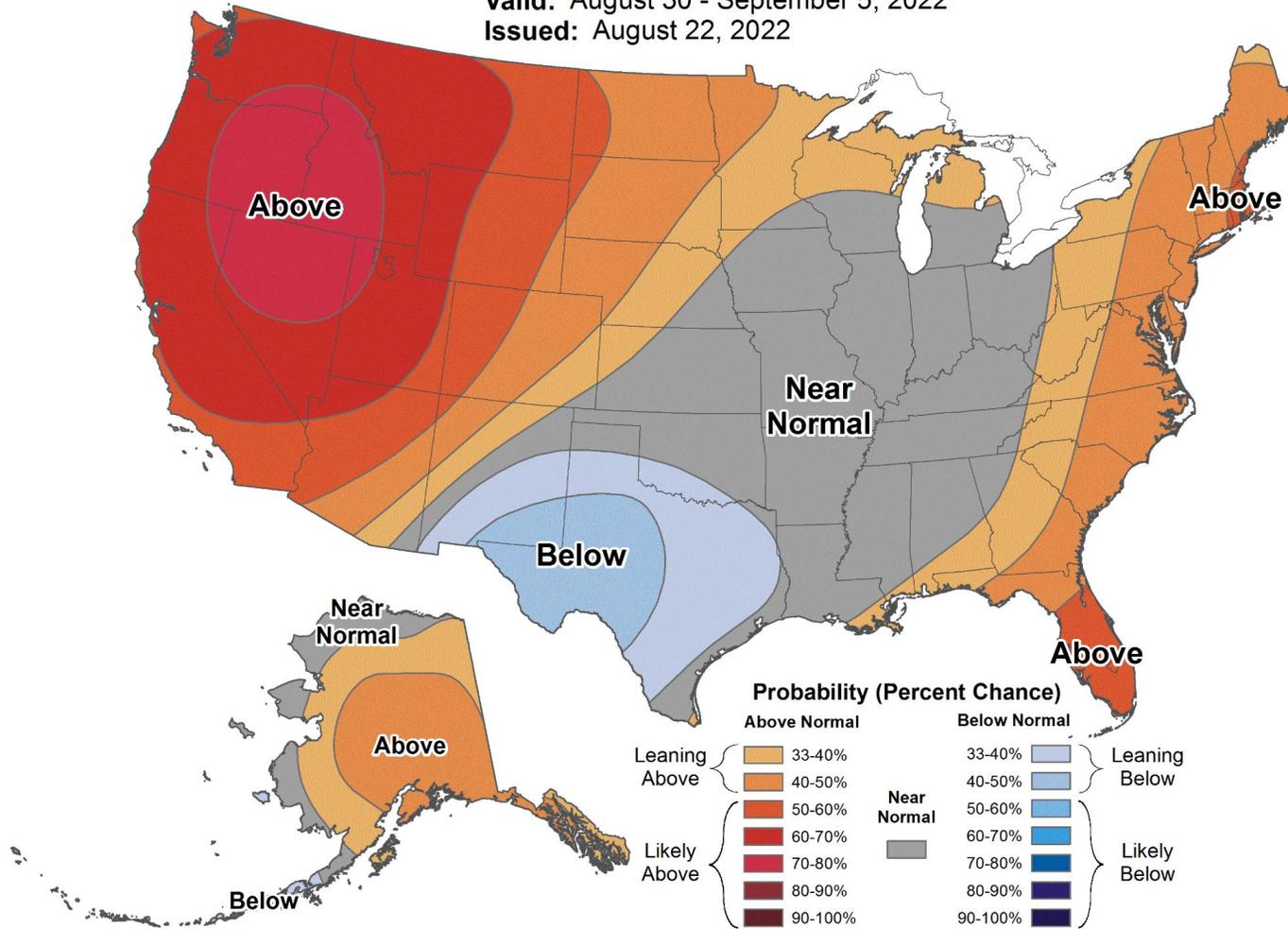


## 8-14 Day Temperature Outlook



Valid: August 30 - September 5, 2022

Issued: August 22, 2022



Agency - National Weather Service Weather Forecast Office

Presenter - Glen Merrill

# Climate Prediction Center 8 to 14 Day Outlooks - Precipitation

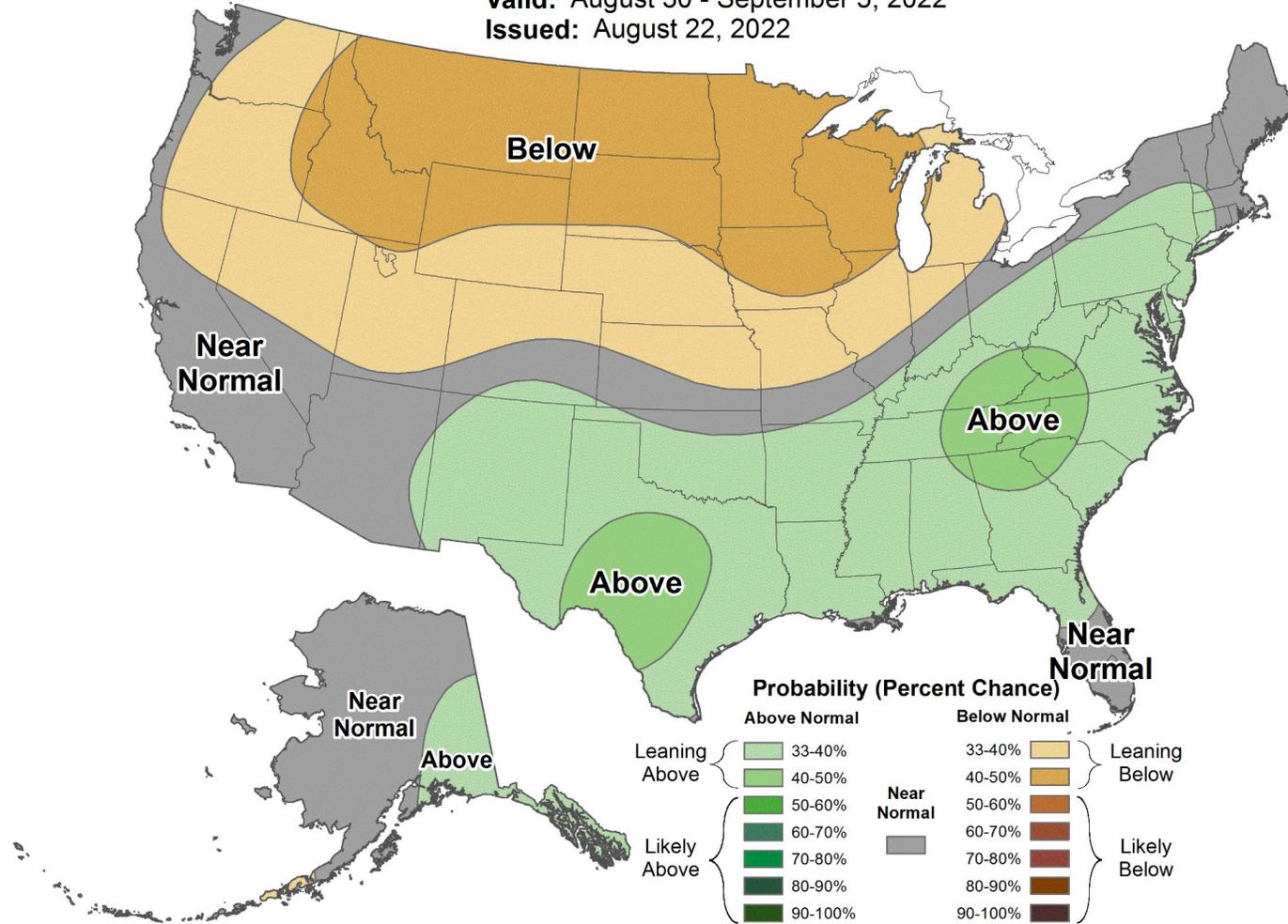


## 8-14 Day Precipitation Outlook



Valid: August 30 - September 5, 2022

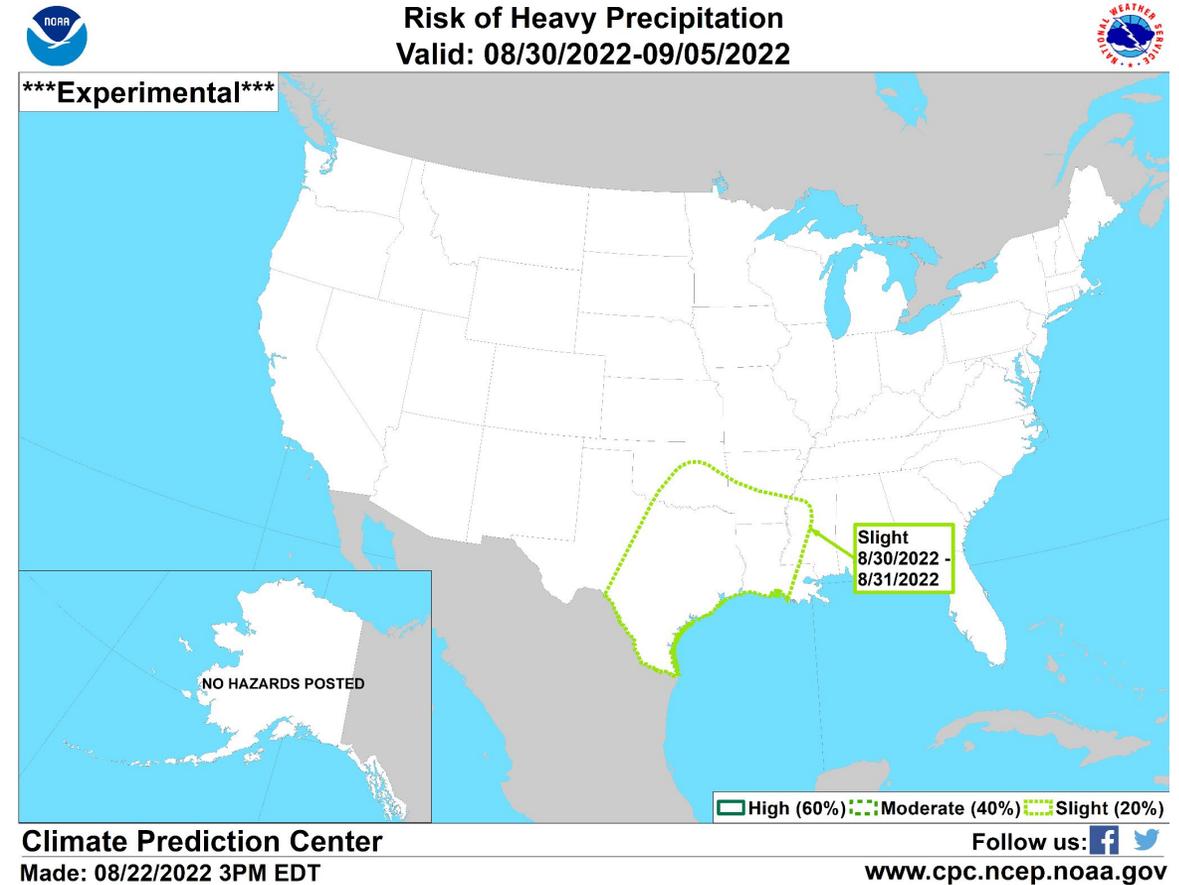
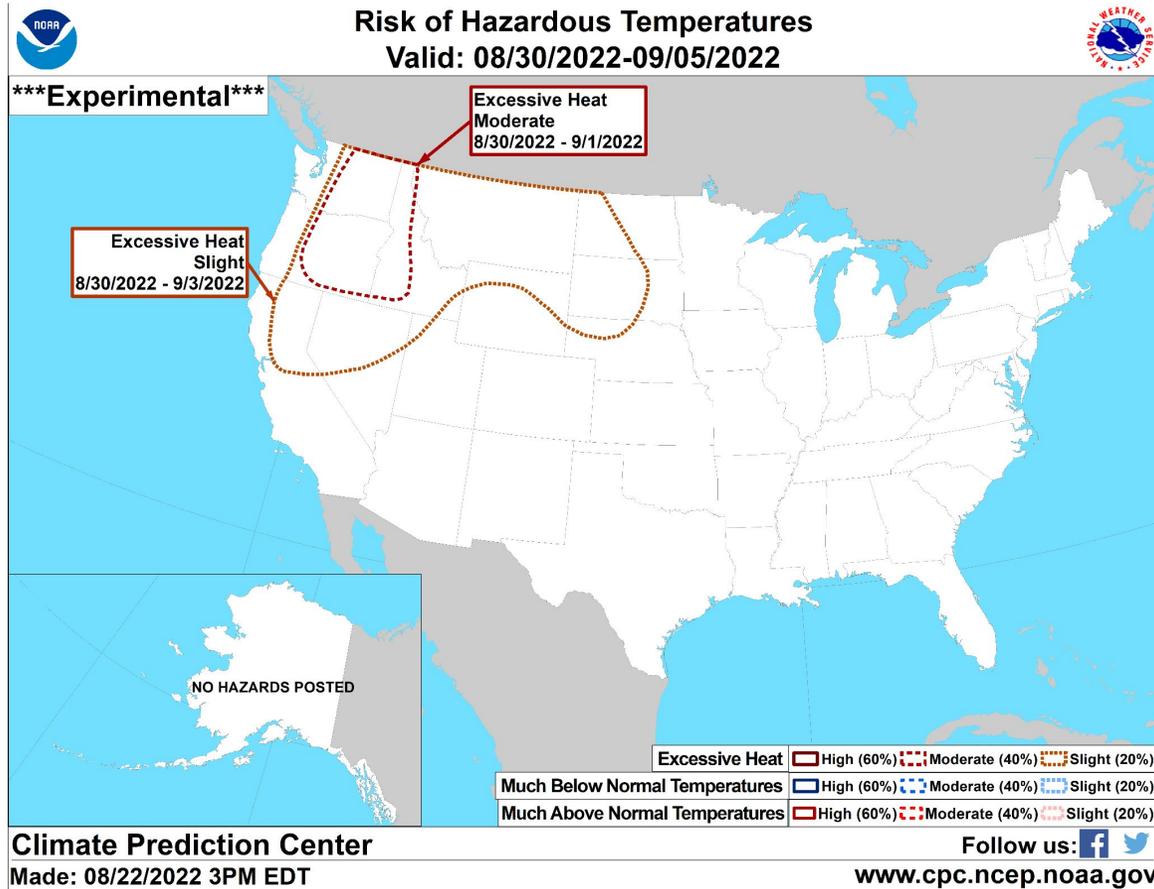
Issued: August 22, 2022

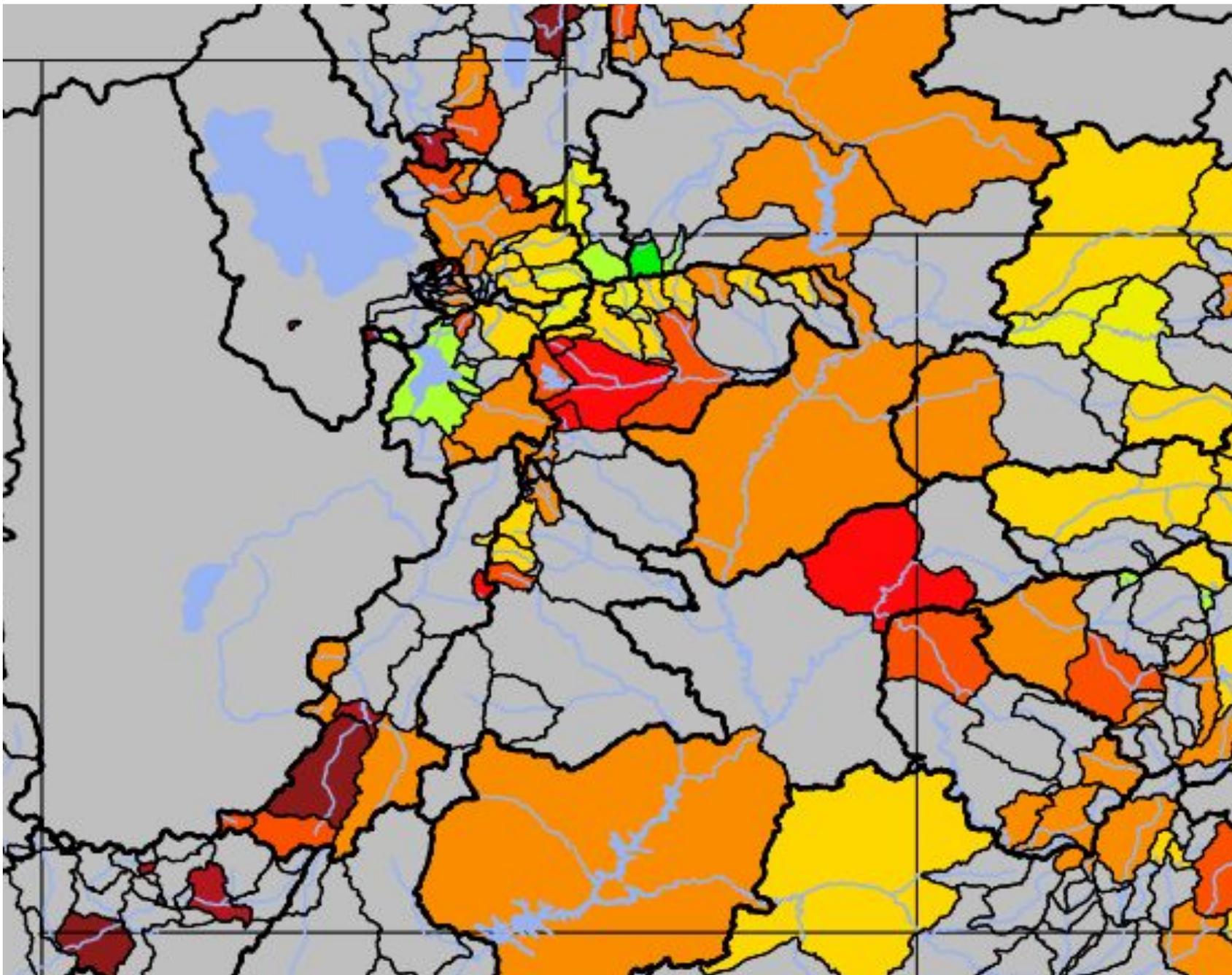
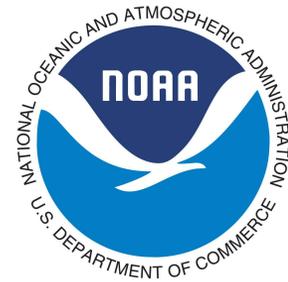


Agency - National Weather Service Weather Forecast Office

Presenter - Glen Merrill

# Climate Prediction Center U.S. Week-2 Hazards Outlook



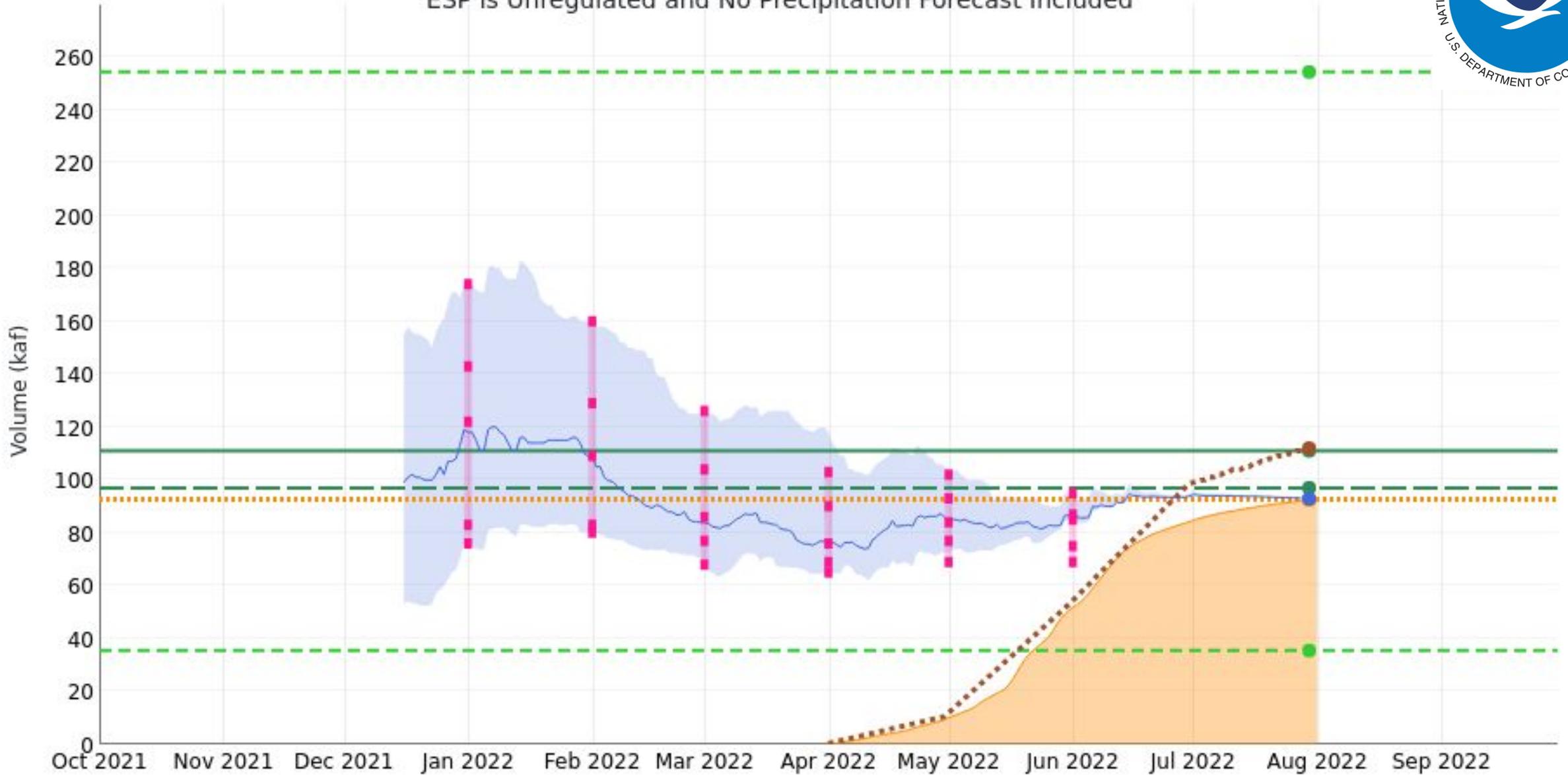


Seasonal observed data over Utah ranged from approximately 80% of average in the northern portions of the Bear and Weber Basins to 40% of average in the Virgin River Basin. Unregulated inflow into Lake Powell is 59% of average (3.75 MAF).

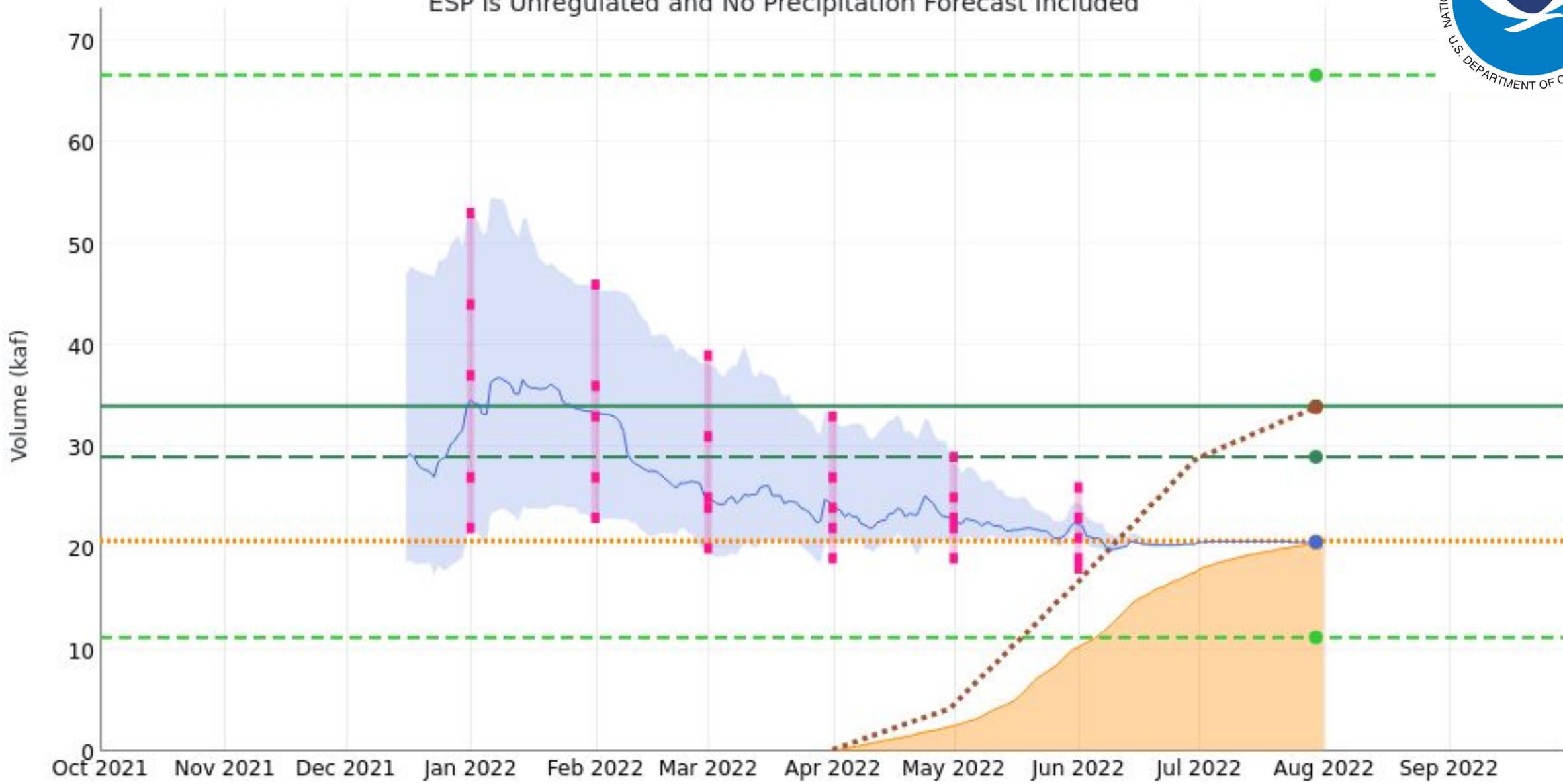
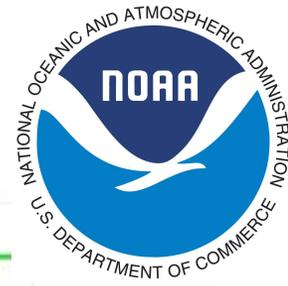
# Weber - Oakley, Nr (OAWU1)

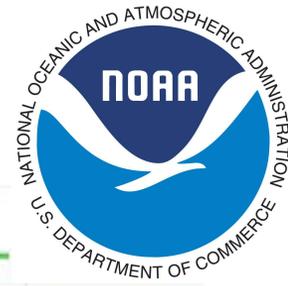
Period: Apr-Jul, Observed Volume: 92.6 kaf (83% Average, 95% Median)

ESP is Unregulated and No Precipitation Forecast Included



**Big Cottonwood Ck - Salt Lake City, Nr (BCTU1)**  
**Period: Apr-Jul, Observed Volume: 20.7 kaf (61% Average, 71% Median)**  
ESP is Unregulated and No Precipitation Forecast Included

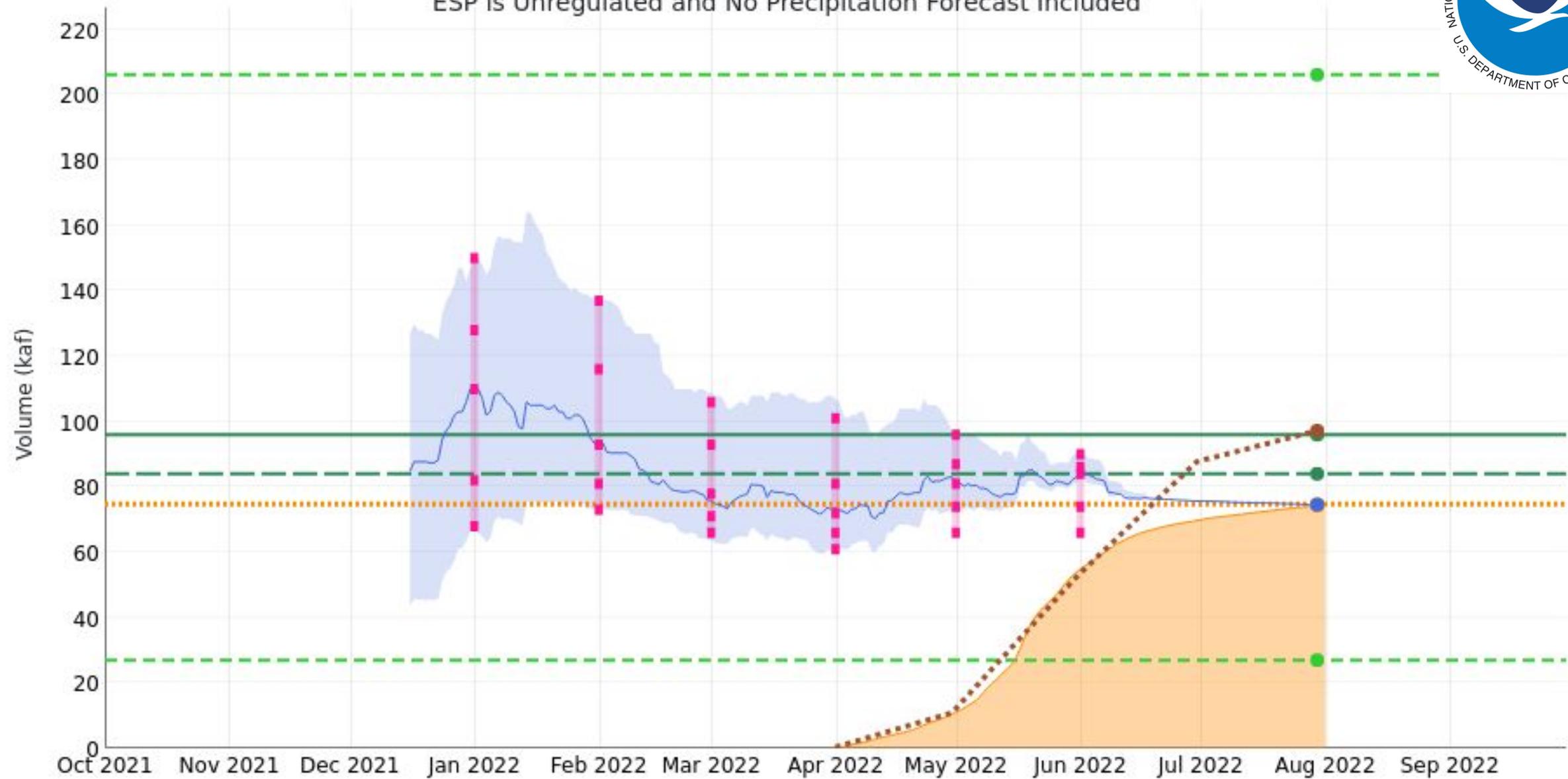




### Provo - Woodland, Nr (W00U1)

Period: Apr-Jul, Observed Volume: 74.7 kaf (78% Average, 89% Median)

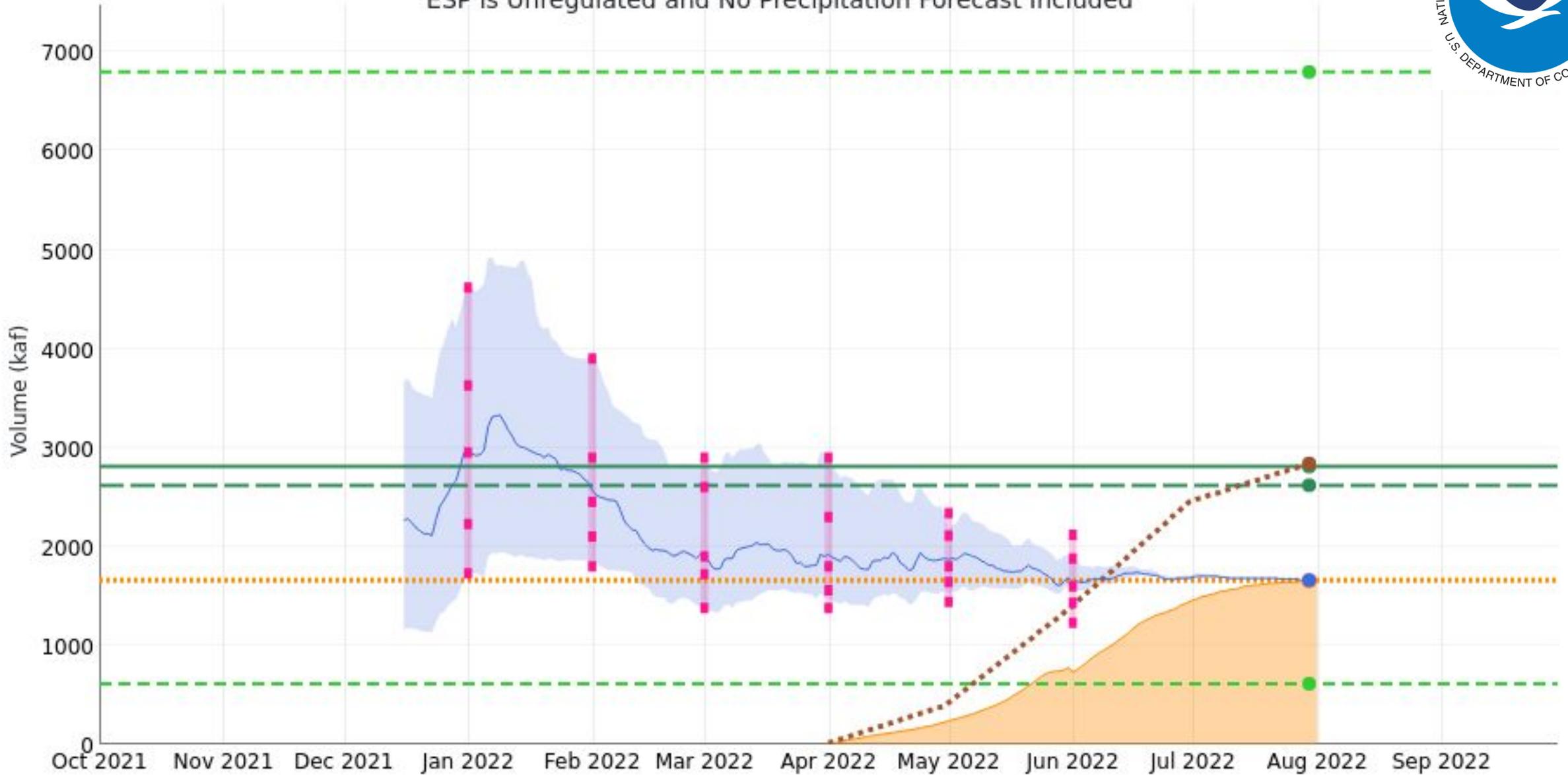
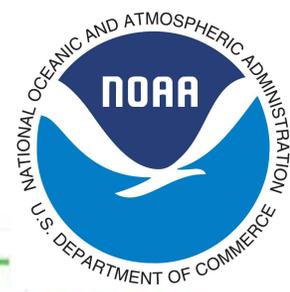
ESP is Unregulated and No Precipitation Forecast Included



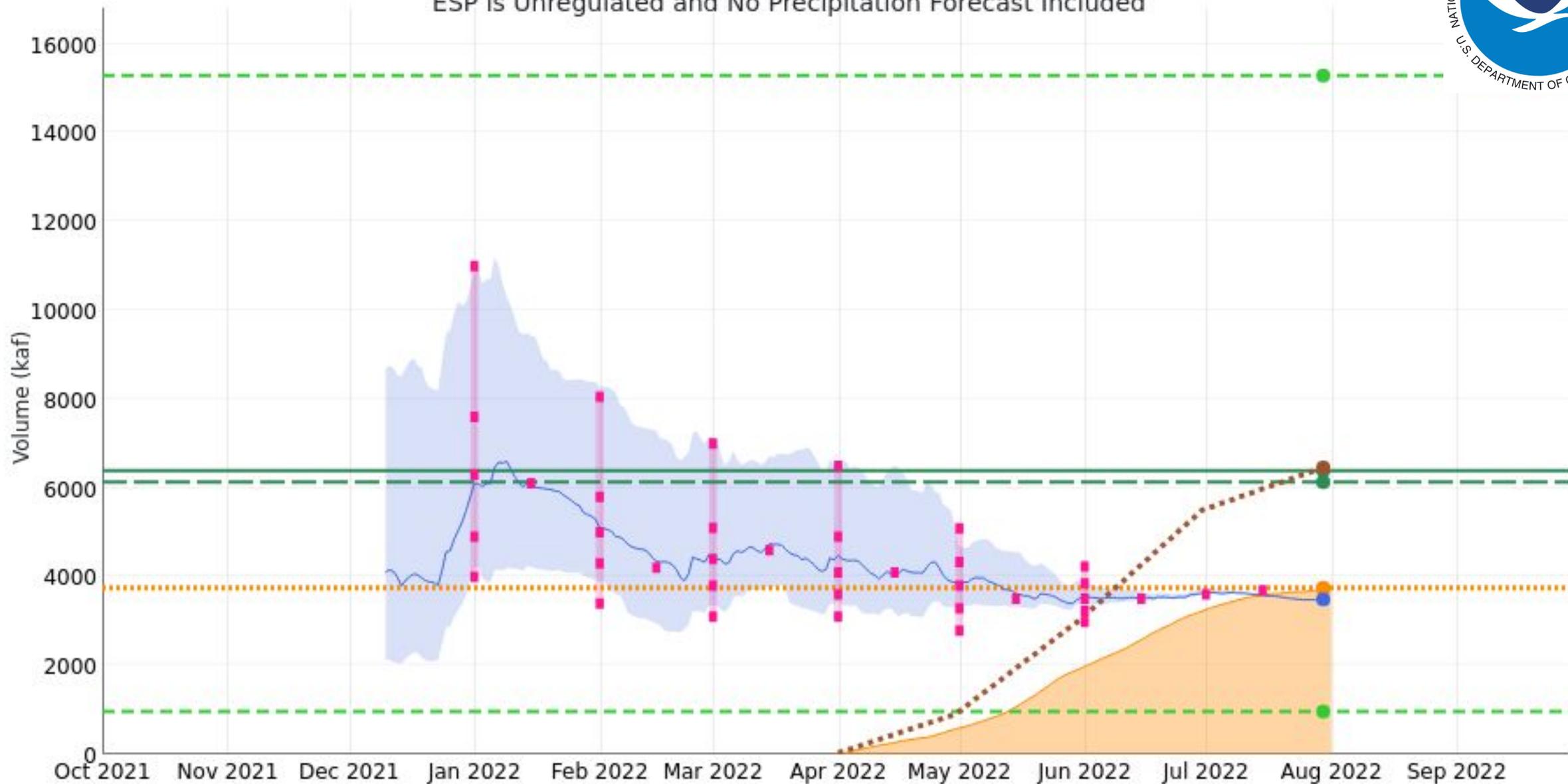
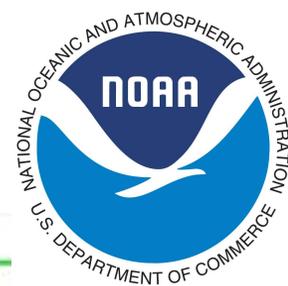
# Green - Green River, Ut (GRVU1)

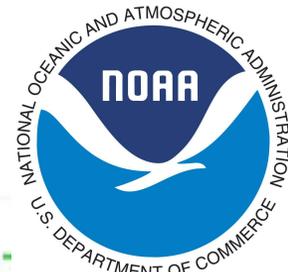
Period: Apr-Jul, Observed Volume: 1660 kaf (59% Average, 63% Median)

ESP is Unregulated and No Precipitation Forecast Included



**Colorado - Lake Powell, Glen Cyn Dam, At (GLDA3)**  
**Period: Apr-Jul, Observed Volume: 3750 kaf (59% Average, 61% Median)**  
ESP is Unregulated and No Precipitation Forecast Included

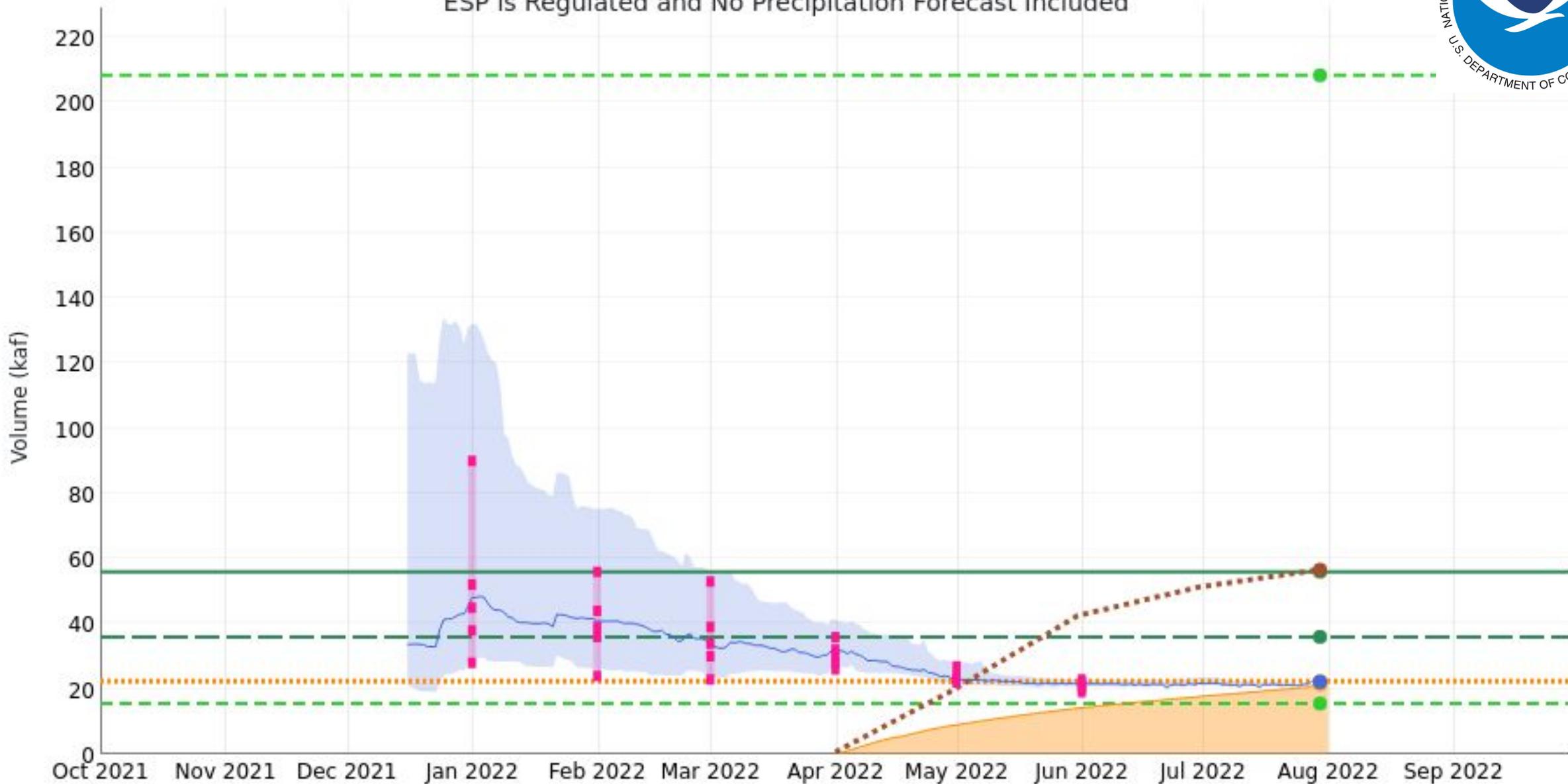




### Virgin - Virgin (VIRU1)

Period: Apr-Jul, Observed Volume: 22.4 kaf (40% Average, 62% Median)

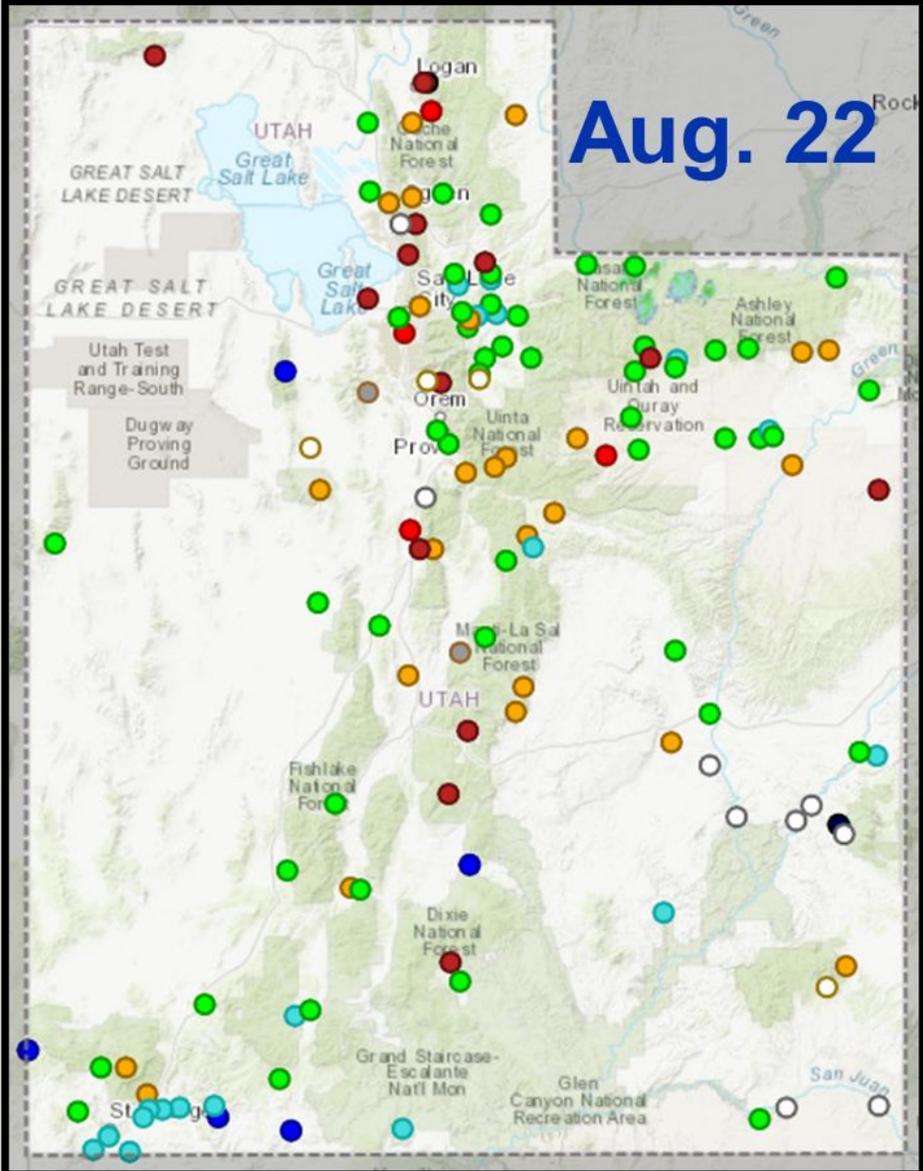
ESP is Regulated and No Precipitation Forecast Included



# August 22 Streamflow Conditions

Aug. 9

Aug. 22



\*Sites must have at least 10 years of streamflow record to be ranked on this graphic

Day-of-Year Status	% Gages	% Gages
All-time high for this day-of-year	0.0%	0.7%
Much above normal for this day-of-year	2.2%	3.6%
Above normal for this day-of-year	2.9%	15.3%
Normal for this day-of-year	40.1%	37.2%
Below normal for this day-of-year	24.8%	19.0%
Much below normal for this day-of-year	13.1%	9.5%
All-time low for this day-of-year	4.4%	2.9%
Not ranked - insufficient record	7.3%	7.3%
Not ranked - stream not flowing	4.4%	2.2%

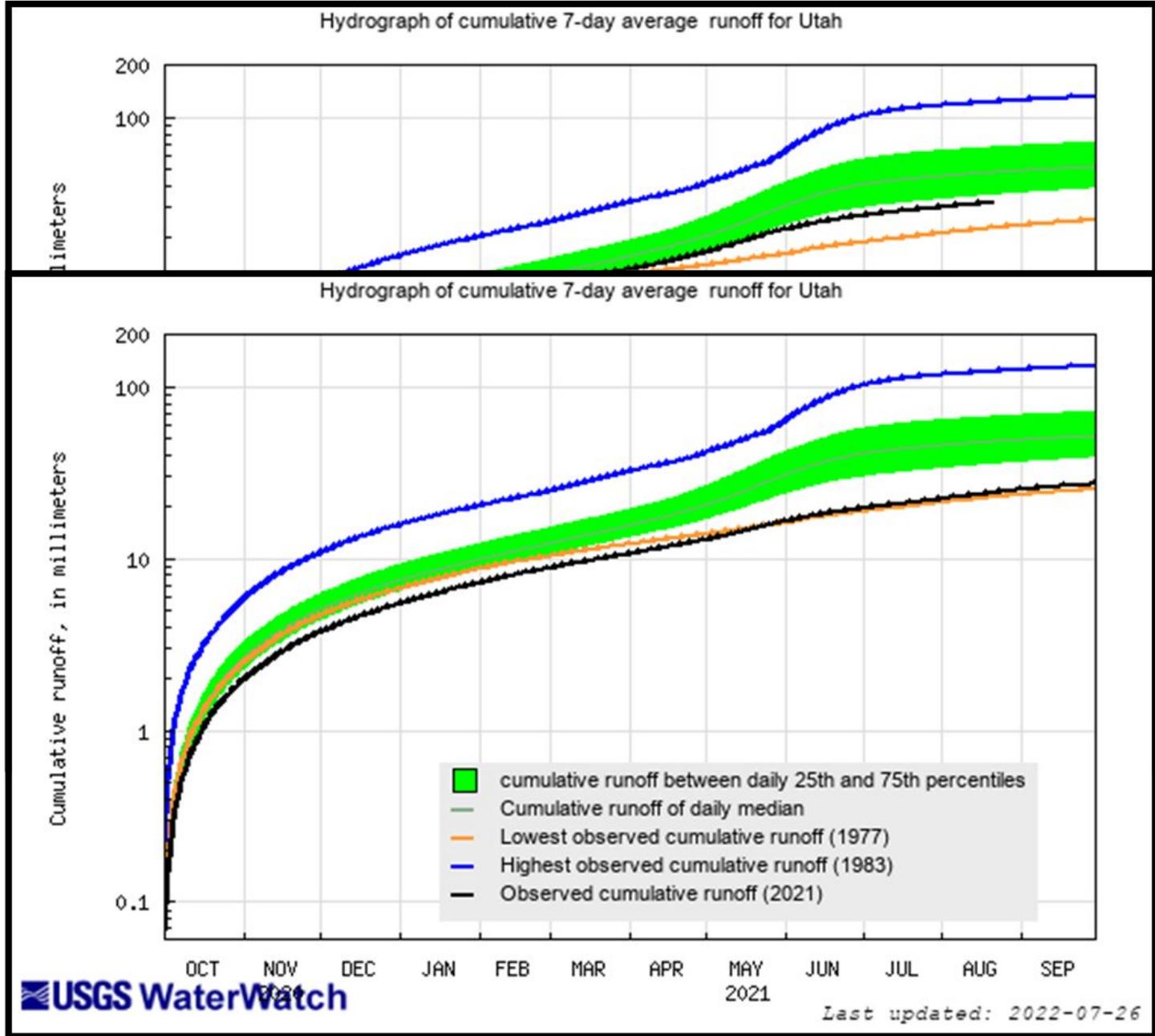
**Streamflow: Status**

- Above flood stage
- All-time high for this day (100<sup>th</sup> percentile (maximum))
- Much above normal (>90<sup>th</sup> percentile)
- Above normal (76<sup>th</sup> – 90<sup>th</sup> percentile)
- Normal (25<sup>th</sup> – 75<sup>th</sup> percentile)
- Below normal (10<sup>th</sup> – 24<sup>th</sup> percentile)
- Much below normal (<10<sup>th</sup> percentile)
- All-time low for this day (0<sup>th</sup> percentile (minimum))
- Not flowing
- Not ranked
- Measurement flag
- Recent measurement unavailable

Agency - USGS Utah WSC  
 Presenter - Laura Haskell on behalf of  
 Ryan Rowland



# Area Based Cumulative Runoff for Utah

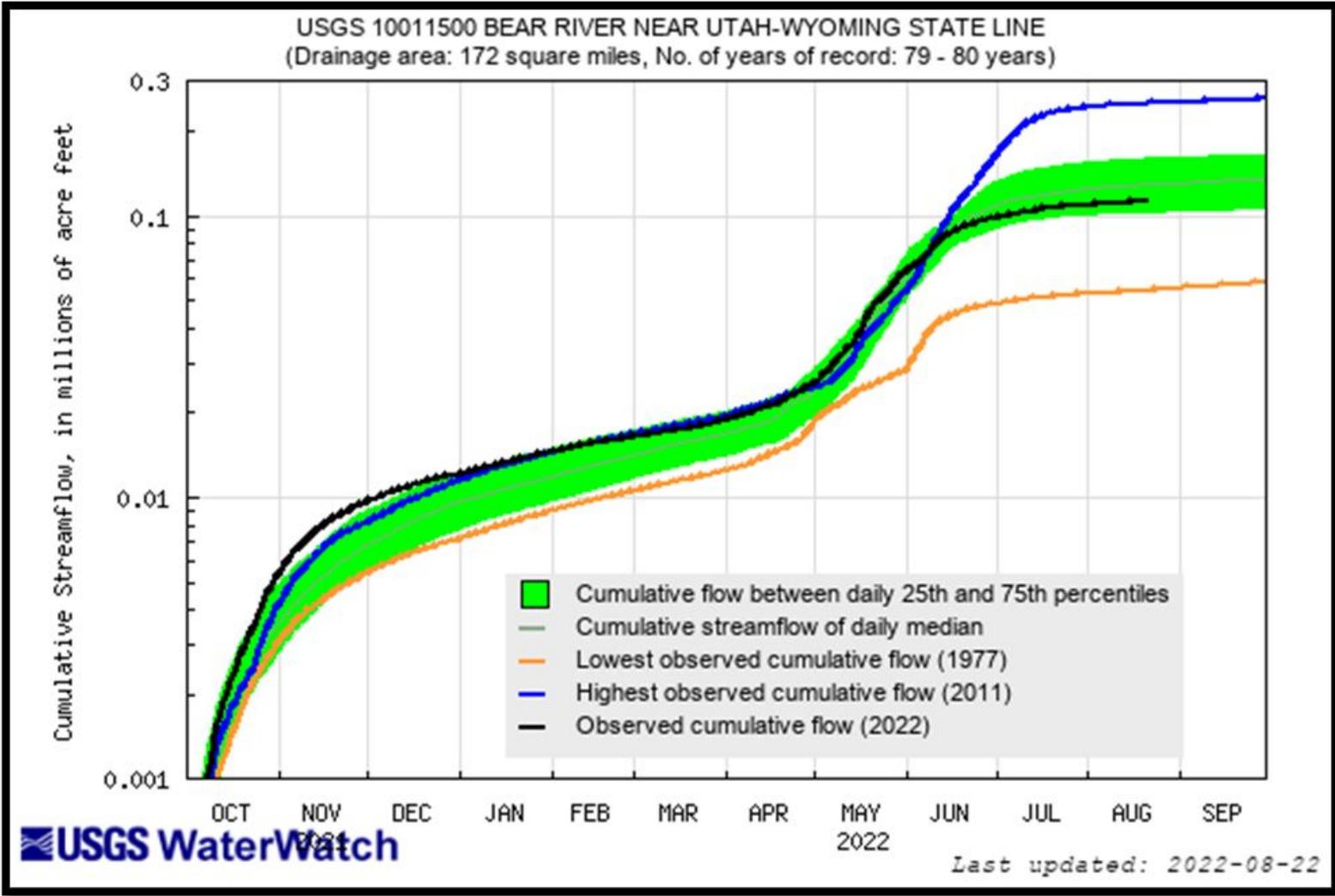
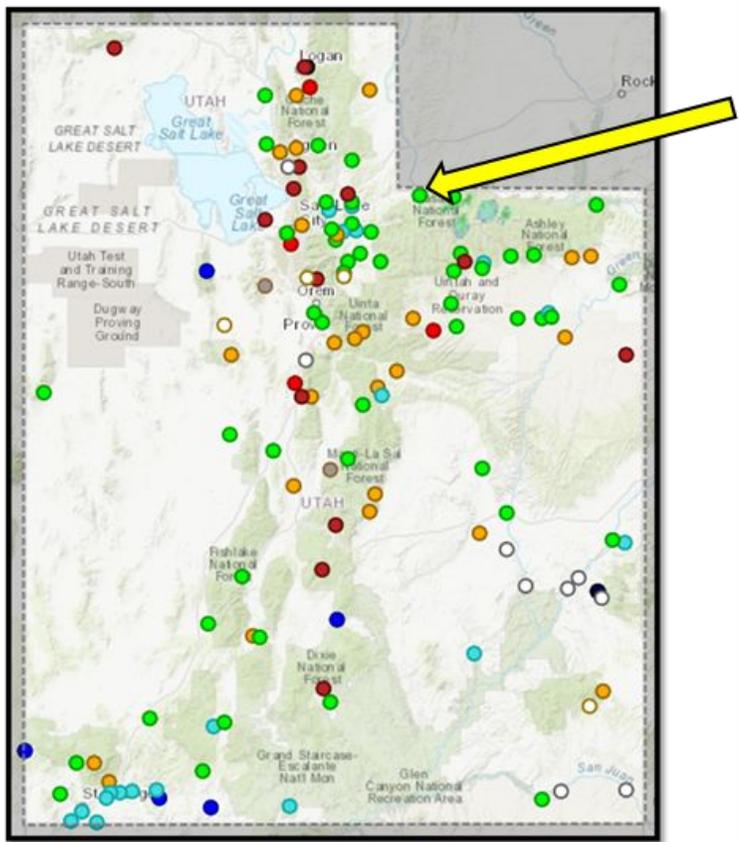


- ❑ Area based runoff computed from mixed regulated and unregulated streamflows
- ❑ WY2022 higher than WY2021, still below normal

Agency - USGS Utah WSC  
Presenter - Laura Haskell on behalf of Ryan Rowland



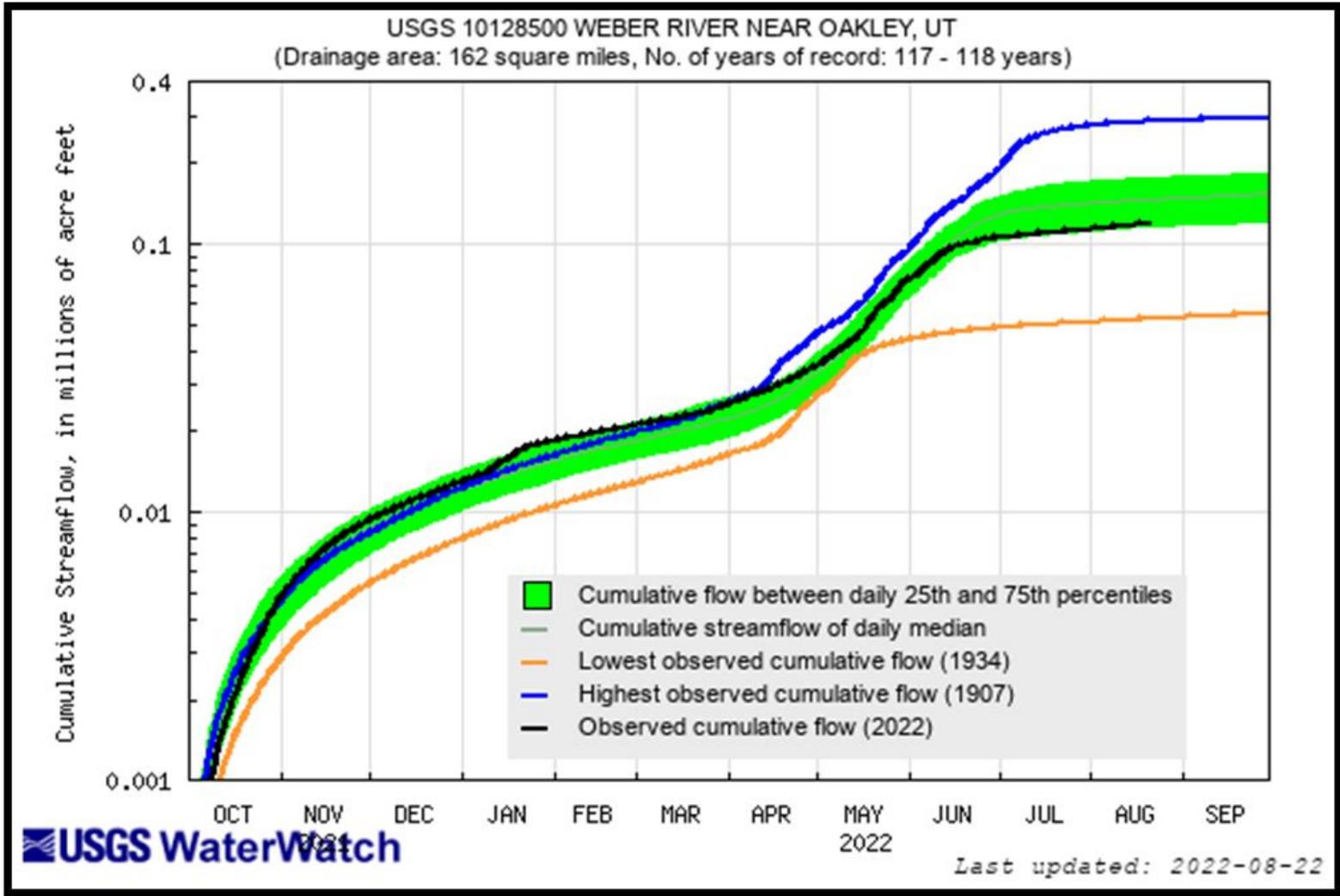
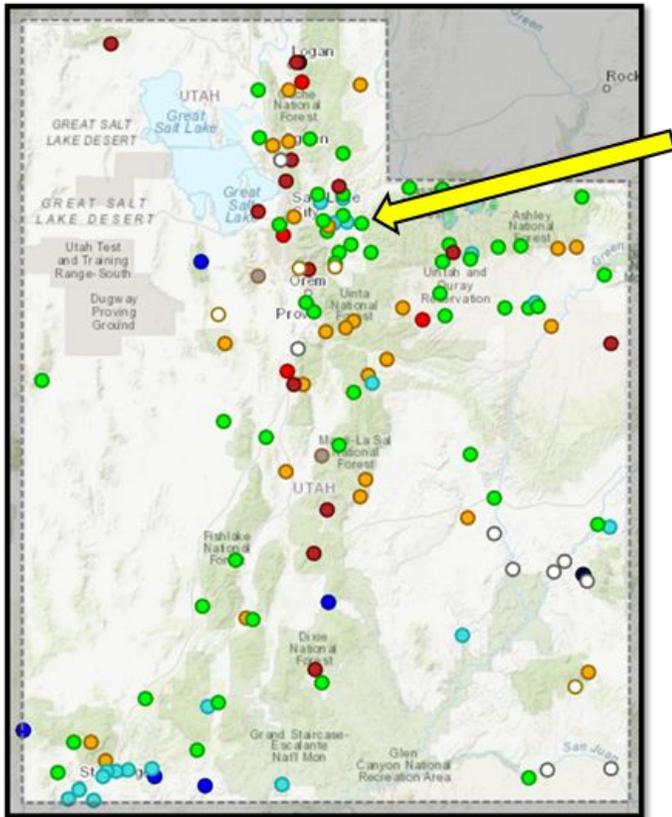
# Cumulative Streamflow at Selected Gages



Agency - USGS Utah WSC  
Presenter - Laura Haskell on behalf of  
Ryan Rowland



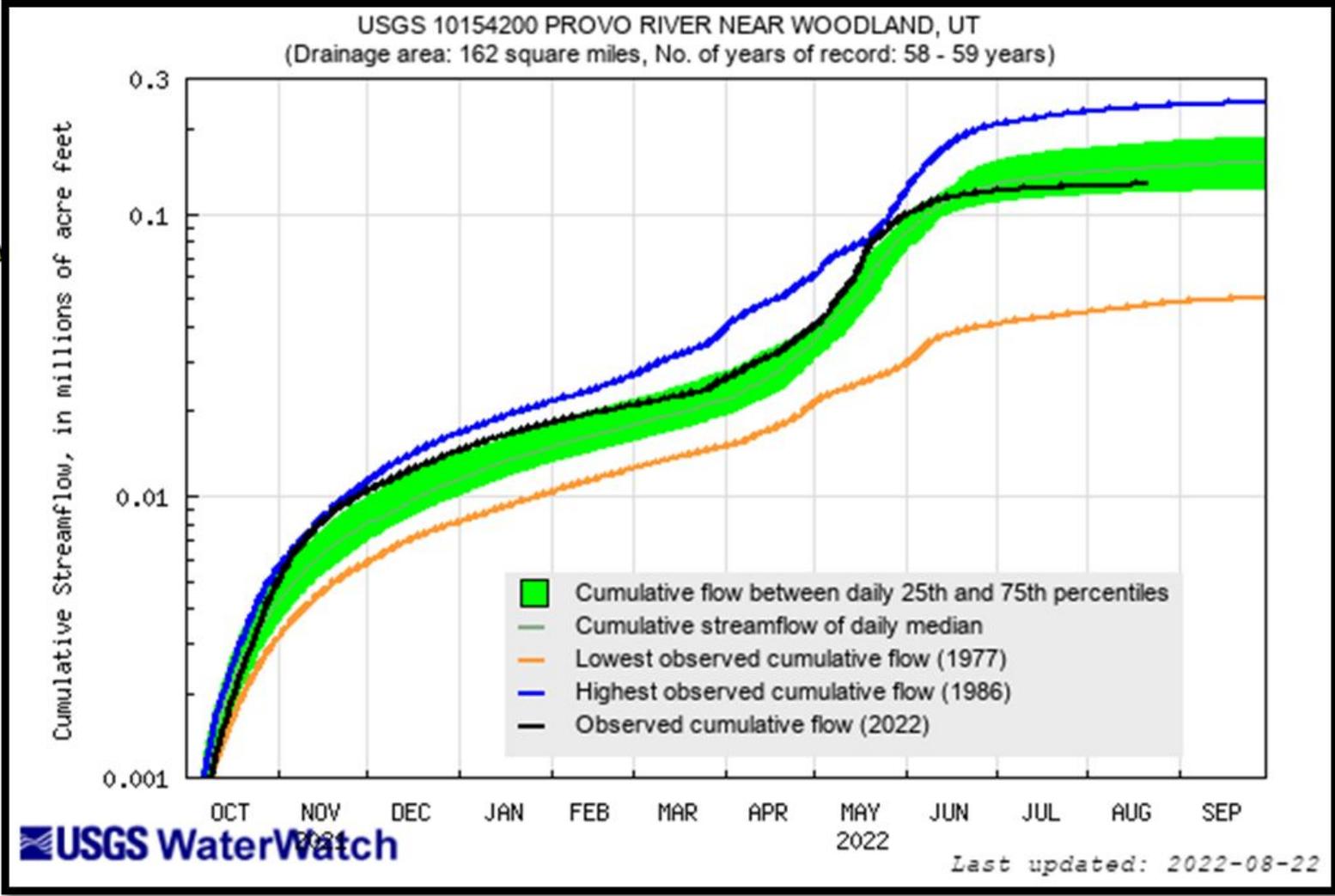
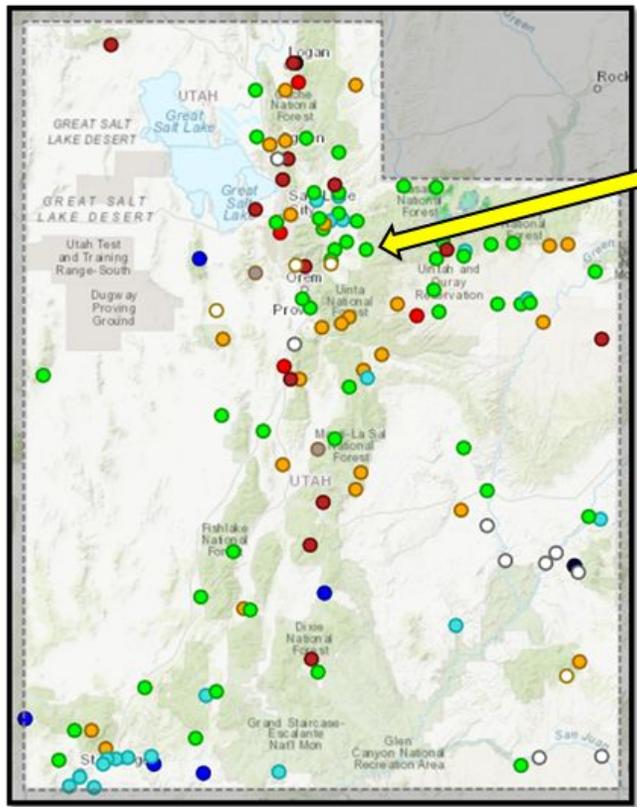
# Cumulative Streamflow at Selected Gages



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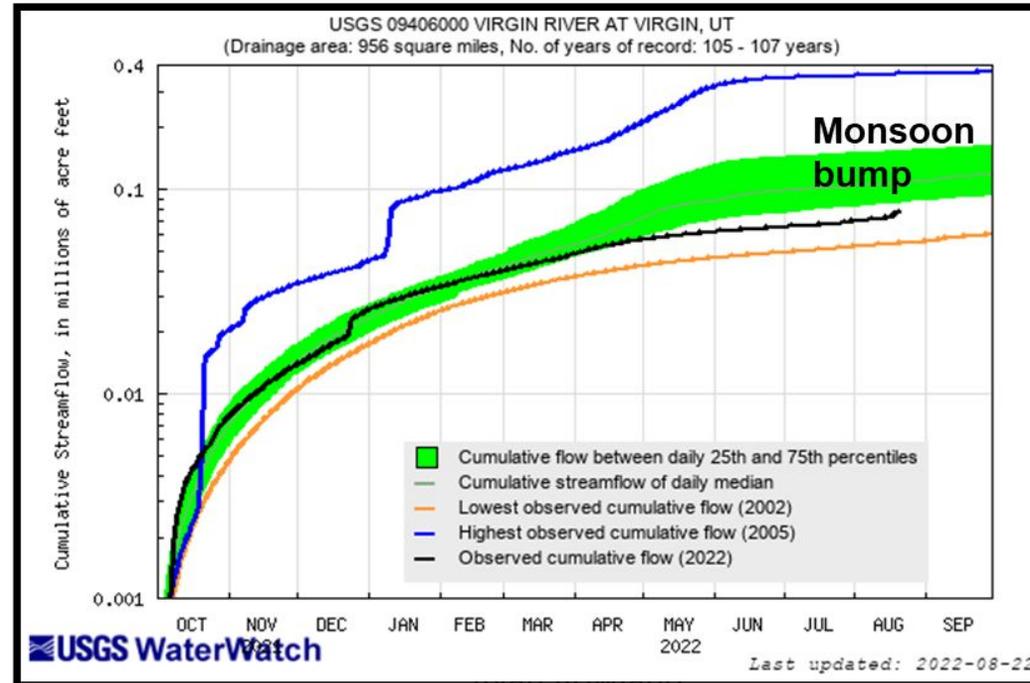
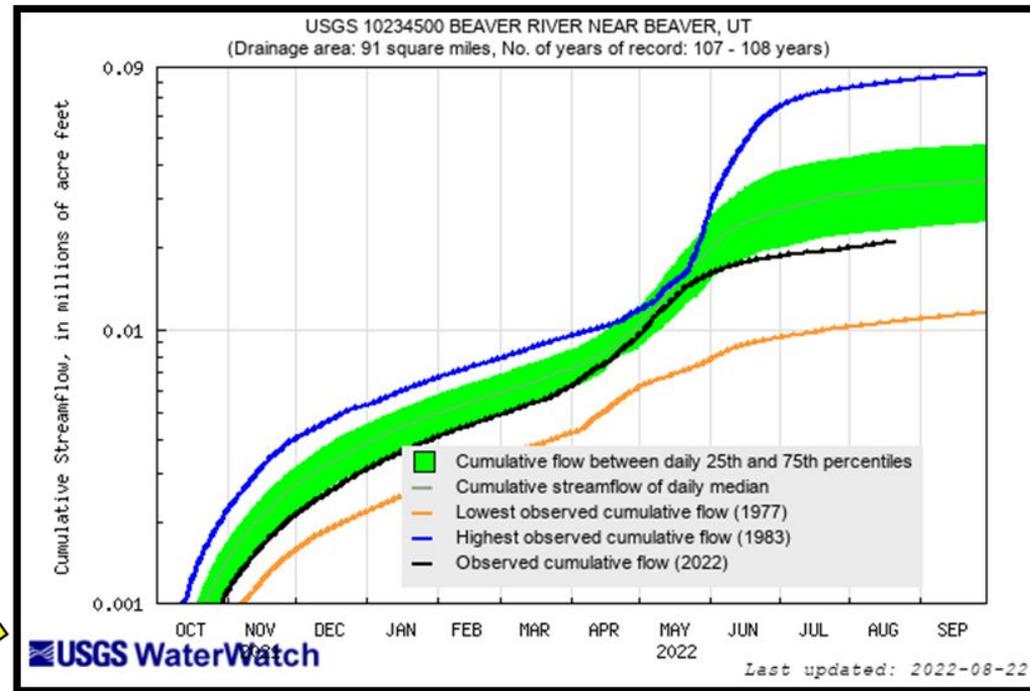
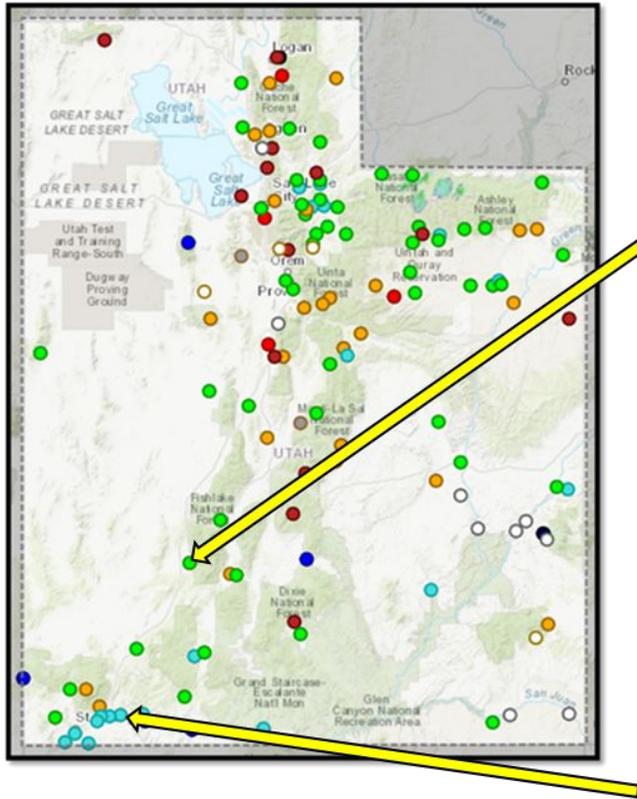
# Cumulative Streamflow at Selected Gages



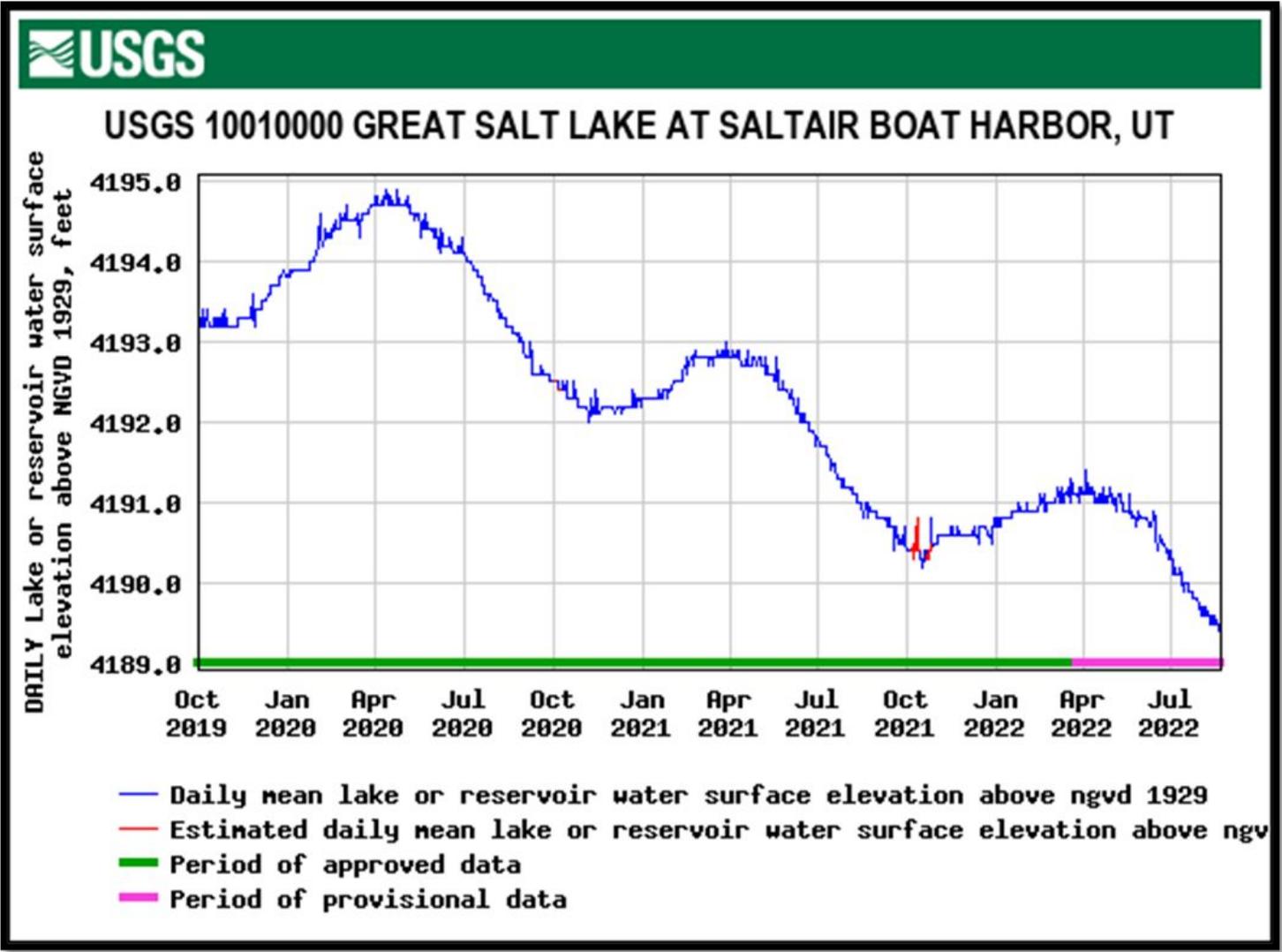
Agency - USGS Utah WSC  
Presenter - Laura Haskell on behalf of  
Ryan Rowland



# Cumulative Streamflow at Selected Gages



# Great Salt Lake Water Surface Elevation



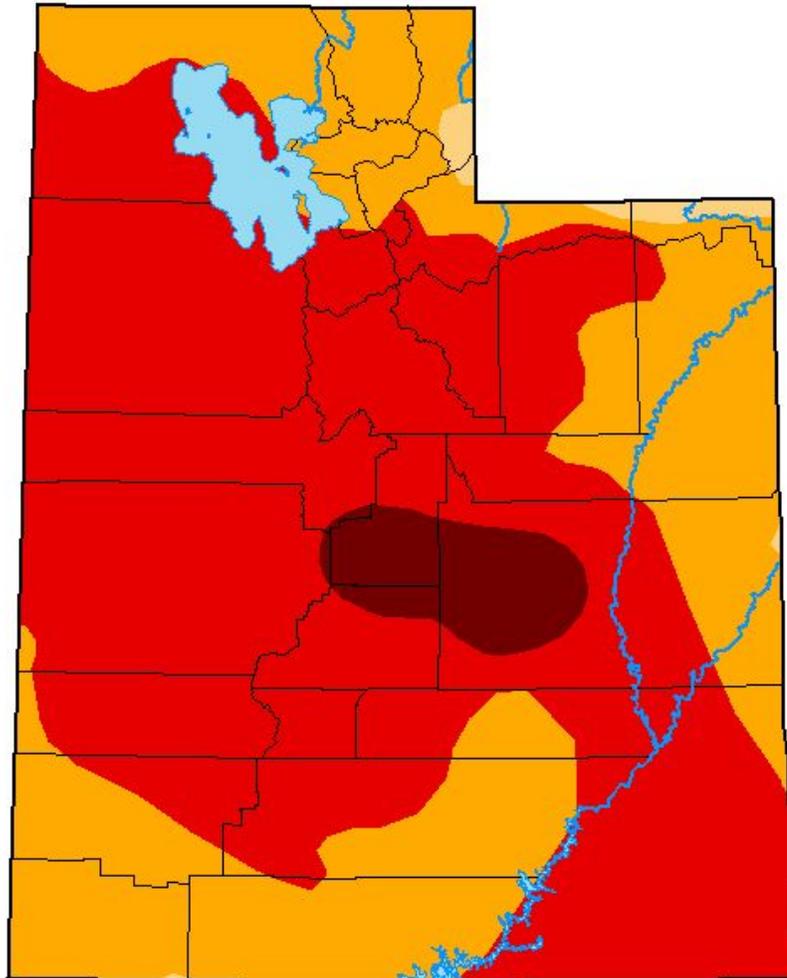
- ❑ Mean daily value 8/21/2022 = 4,189.4' (record lows continue)
- ❑ Mean daily value 8/8/2022 = 4,189.6'
- ❑ Running out of water at gage location. Will switch soon to gage on the south side of RR causeway

Agency - USGS Utah WSC  
Presenter - Laura Haskell on behalf of Ryan Rowland



# U.S. Drought Monitor Utah

**August 16, 2022**  
(Released Thursday, Aug. 18, 2022)  
Valid 8 a.m. EDT



### Intensity:

-  None
-  D0 Abnormally Dry
-  D1 Moderate Drought
-  D2 Severe Drought
-  D3 Extreme Drought
-  D4 Exceptional Drought

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>*

### Author:

Richard Tinker  
CPC/NOAA/NWS/NCEP



[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

to-date Standardized Precipitation Index: 2022/01/01 - 2022/08/21

